HONOLULU AUTHORITY for RAPID TRANSPORTATION

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Joint Meeting of
Finance Committee and
Project Oversight Committee
Mission Memorial Annex Conference Room
550 South King Street, Honolulu, Hawaii
Thursday, June 13, 2013, 9:00 am

Agenda

I. Call to Order by Chair

II. Public Testimony on all Agenda Items

III. Approval of the May 2, 2013 Minutes of the Joint Meeting of the Finance Committee and Project Oversight Committee

IV. April 2013 Monthly Progress Report

V. Full Funding Grant Agreement Update

VI. FY14 Business Plan Discussion

VII. Change Order Approvals

A. Maintenance of Farrington Highway Under HDOT Joint Use and Occupancy Agreement

B. Partial Suspension for Traditional Cultural Properties

VIII. Ansaldo Honolulu Joint Venture Site Visit Report

IX. Litigation Update

X. Executive Session
Pursuant to Hawaii Revised Statutes Section 92-4 and Section 92-5(a)(4), the Board(s) may enter into Executive Session to consult with its attorneys on questions and issues on a matter pertaining to the Board's powers, duties, privileges, immunities and liabilities.

XI. Adjournment

Note: Persons wishing to testify on items listed on the agenda are requested to register by completing a speaker registration form at the meeting or online on the HART section of the www.honolulutransit.org website. Each speaker is limited to a **two-minute** presentation.

Persons who have not registered to speak in advance should raise their hands at the time designated for public testimony and they will be given an opportunity to speak following oral testimonies of the registered speakers.

Any physically challenged person requiring special assistance should call (808) 768-6258 for details at least three days prior to the meeting date.

HONOLULU RAIL TRANSIT PROJECT

April 2013

Cost, Schedule, Risk data date 3/29
Other Activities 4/30

MONTHLY PROGRESS REPORT

HART

HONOLULU AUTHORITY for RAPID TRANSPORTATION

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1 EXECUTIVE SUMMARY

1.1 Key Activities This Month

Discussions regarding the rail project's interface at the Honolulu International Airport continue among the Honolulu Authority for Rapid Transportation (HART), the Hawaii Department of Transportation's Airport Division (HDOT-A) and the Federal Aviation Administration's Hawaii Division. From the Airport Station, a covered walkway would be provided to both the International Parking Structure and the Overseas Terminal Parking Structure which would be accessible from a single level station platform.

On April 11, a joint meeting was convened by HART's Board of Directors and the Board of Directors of Oahu Transit Services (OTS), the entity that provides bus management services for the City and County of Honolulu (City). Mayor Kirk Caldwell, and City Councilmembers Breene Harimoto and Joey Manahan were in attendance. Mayor Caldwell addressed the Boards by reiterating that it is not rail versus bus, but rail and bus working hand-in-hand to create an efficient public transportation system.

Through adoption of their respective resolutions, the Boards agreed to establish a joint task force to research and study integrated bus and rail operations in other jurisdictions for applicability in Honolulu with respect to:

- Efficient and cost-saving intermodal operations;
- The identification and elimination of operational redundancies;
- The identification and maximization of operational synergies;
- Common fare media/technology, IT and telecommunications;
- The implementation of equitable fare structure(s) and prices;
- Common administration, operations and/or maintenance; and
- Any and all other information and/or proposals in furtherance of seamless and cost-efficient Rail/Bus multimodal operations.

On April 16, Governor Neil Abercrombie approved Act 012, which increases the membership of a metropolitan planning organization from 13 to 14 members. The additional member is "the director of the authority for rapid or mass transportation, or a successor agency thereof, that operates public transportation on that island." Act 012 took effect upon its approval on April 16.

1.2 Key Current Issues

Archaeological Inventory Survey (AIS) Reports

The State Historic Preservation Division (SHPD) completed review and comment on the AIS Reports for the Airport section. Revisions are in progress. AIS Reports for the City Center section were submitted to the SHPD for review on April 8. The review and approval by SHPD of the AIS Reports for all four construction sections of the Project will fulfill project-wide reporting requirements.

Potential Burial Site Discovery

Coordination with SHPD and the Oahu Island Burial Council (OIBC) as well as outreach to descendant families continues on the seven iwi kūpuna (human skeletal remains) discovered during the AIS City Center field work.

Traditional Cultural Property (TCP) Studies

TCP studies for the City Center section are undergoing review and consultation with the Programmatic Agreement Consulting Parties.

1.3 Project Scope Status Overview

There have been no project scope changes; the project scope continues to reflect the Final Environmental Impact Statement (FEIS). While the scope has not changed, the Contract Packaging Plan (CPP) is being modified with certain facility design and construction work re-packaging.

1.4 Project Schedule Status Overview

Despite the AIS delay, HART is implementing measures to maintain the March 30, 2019 full revenue service date (RSD), 10 months ahead of the January 31, 2020 FFGA RSD. The March 2019 RSD is the milestone date reflected in the FFGA Master Project Schedule (MPS) and is consistent with all FFGA request submittals.

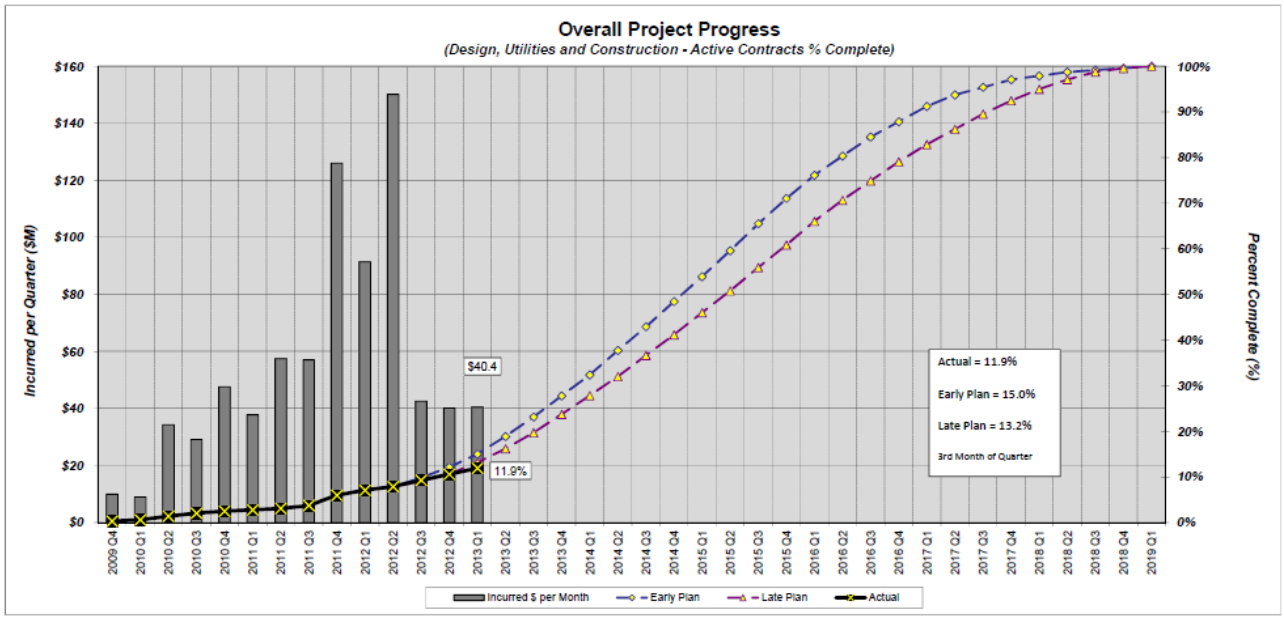
Due to the delay to construction, the scheduled Interim Passenger Opening milestone will slip from June 2016 to June 2017. Several contract packages are being combined to maximize economies of scale and reduce interface needs between design and construction contractors to achieve both cost and schedule benefits. These updates are displayed in the latest Summary MPS on page 20 and Procurement Tracking Reports starting on page 24.

1.5 Project Progress Overview

Overall project, construction, design and utilities progress is presented below and on the following pages in terms of actual versus planned percent complete by quarter, in accordance with the FFGA MPS and Project Budget. Individual construction, design and utilities contract status is presented in Sections 3.2 through 3.5 of this report.

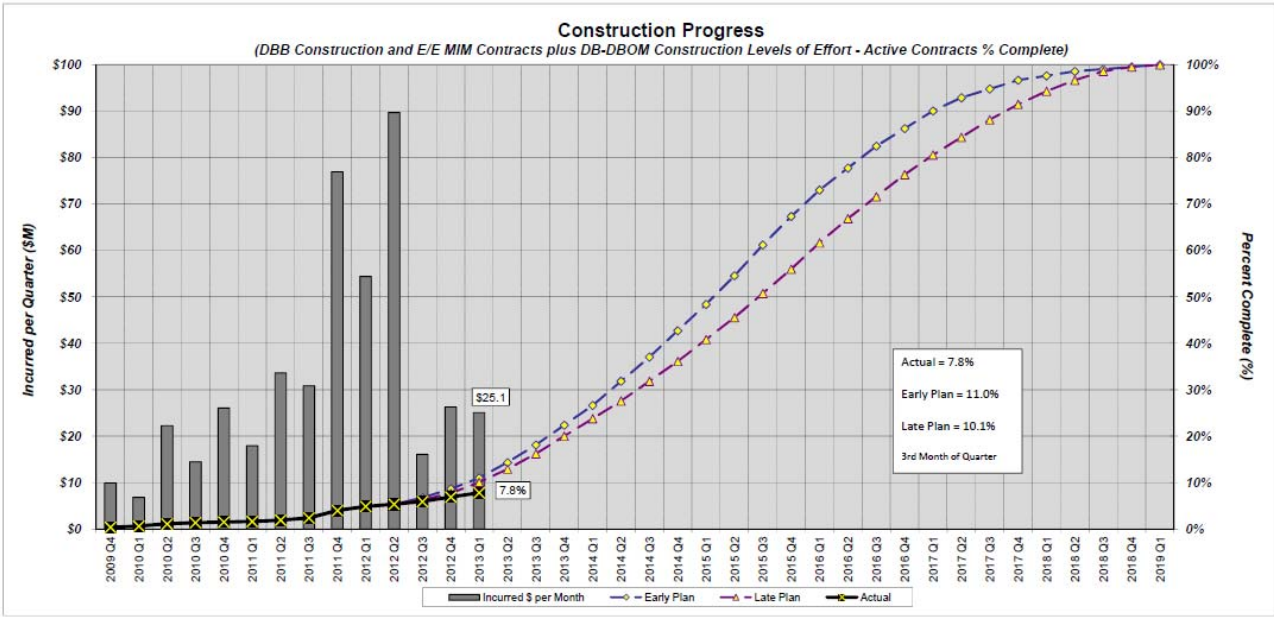
At present "overall" project progress is based on the weighted value progress of the individual construction and design contracts (Design-Build [DB], Design-Bid-Build [DBB], Design-Build-Operate-Maintain [DBOM], Elevator/Escalator Manufacture-Install-Test-Maintain [MIM], Final Design [FD] and DB-DBOM design levels of effort), not including City or non-design consultant labor. Overall Project Progress will reflect all project elements as budgeted. Utilizing the existing Project progress method through March 29, 2013, progress is 11.9%, versus the early plan of 15.0% and the late plan of 13.2%, as shown in Figure 1.

Figure 1. Overall Project Progress (% Complete)



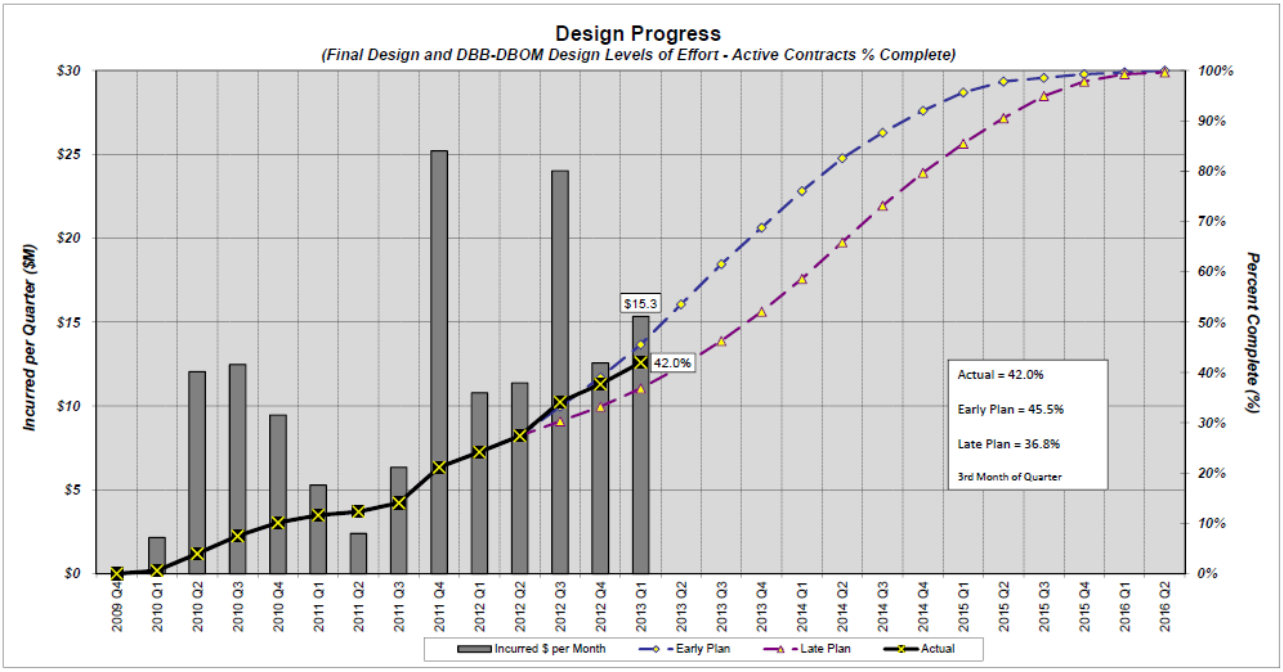
Overall construction progress as of March 29 is 7.8%, versus the early plan of 11.0% and the late plan of 10.1%, as shown in Figure 2 below. Overall construction progress is based on the weighted average progress of the individual DBB and E/E MIM construction contracts and the DB-DBOM construction levels of effort, not including consultant construction engineering and inspection (CE&I) services.

Figure 2. Construction Progress (% Complete)



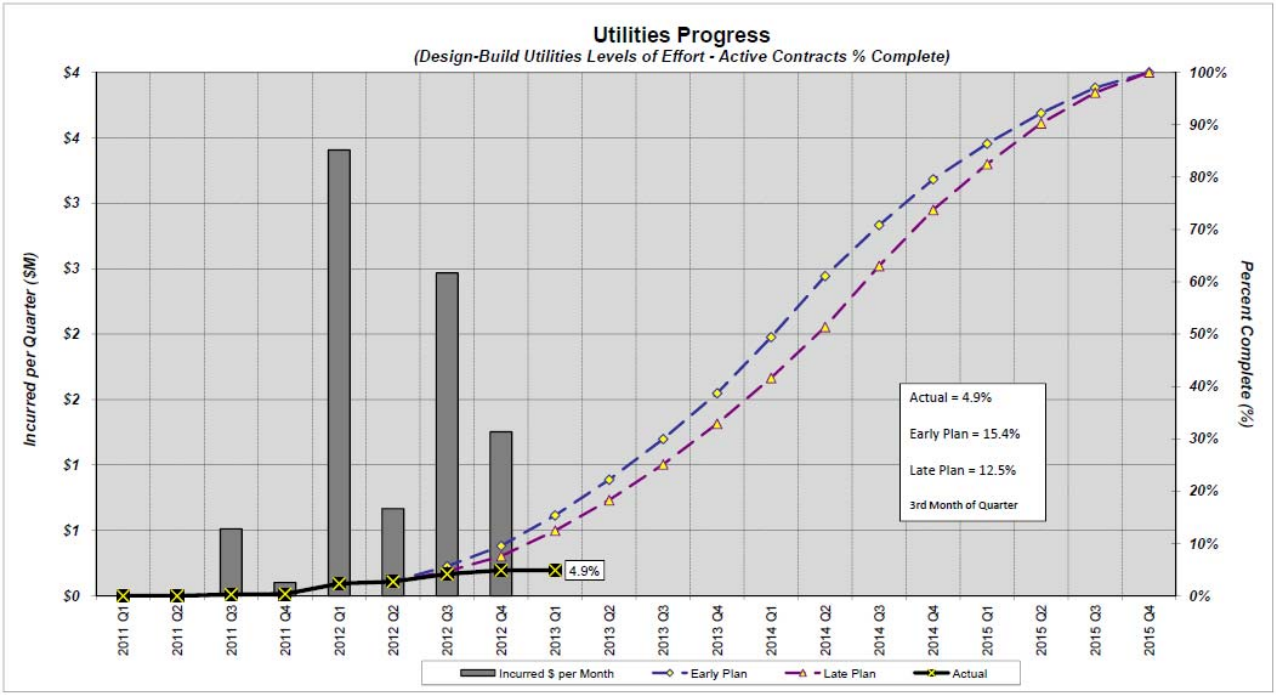
Overall design progress through March 2013 is 42%, versus the early plan of 45.5% and the late plan of 36.8%, as shown in Figure 3 below. Overall design progress is based on the weighted average progress of the individual FD contracts and the design levels of effort of the DB and DBOM construction contracts, not including City or non-design consultant labor.

Figure 3. Design Progress (% Complete)



Overall utilities progress through March 2013 is 4.9%, versus the early plan of 15.4% and the late plan of 12.5%, as shown in Figure 4 below. Overall utilities progress is based on the weighted average progress of the DB utilities levels of effort.

Figure 4. Utilities Progress (% Complete)



1.6 Financial Status Overview

1.6.1 Project Budget

The total incurred cost (actual expenditures plus approved requests for payment) as of March 29 was $655.9M, or 15.4% of the FFGA Baseline Project Budget (excluding contingencies and finance charges) of $4.252 billion.

The total committed amount as of March 29 was $2.260B, or 53.1% of the FFGA Baseline Project Budget (including awarded design contract allowances of $5.4M, excluding uncommitted contingencies and finance charges).

The total amount Authorized for Expenditure (AFE) by way of Notices to Proceed (NTPs) was $1.077B, or 25.3% of the FFGA Project Budget (excluding uncommitted contingencies and finance charges). During this reporting period, HART issued 2 notices to proceed for the Real Estate Consultant contract and one Change Order for Maintenance and Storage Facility DB contract. There is a net AFE increase of $542k as the result of the executed change and 2 NTPs.

Notices to Proceed			
Contract		Scope	Amount ($)
MM-935	Real Estate Consultant	AFE #23	10,396
MM-935	Real Estate Consultant	AFE #24	11,655
Change Orders/Cost Adjustment			
DB-200	Maintenance & Storage Facility DB	Change Order 06	520,014

To date, 23 of the 42 planned design, construction and specialty consultant contracts have been awarded.

During the March 2013 cost reporting period, HART executed one change order for approximately $.520M on the Maintenance Storage Facility Design-Build contract (DB-200), $.465M of the change order draws against the Project Contingency, the remaining $.05M draws down the "known" changes balance of contingency. A Contract Amendment for $3,885 was also executed on the Farrington Highway Stations Group Final Design which also draws down on Project Contingency. The net result of the executed change order and contract amendment for this period results in a Current Project Contingency Budget of $652.2M. Cost contingency details are presented in Section 2.1 of this report, along with a discussion of contingency management and the proposed Cost Contingency Drawdown Chart in Section 2.4.

1.6.2 Project Funding

Approximately $67.5M in FTA Section 5309 New Starts funds was drawndown in March and is included in Section 2.2 of this report. The $67.5 million is a reimbursement for 29.3% of approximately $230.5 million paid with local funds as of November 30, 2012 for partial engineering and construction costs incurred under pre-award authority and Letters of No Prejudice.

The State of Hawaii informed the City that approximately $55.3M in county General Excise Tax surcharge for the quarter ended March 31 will be distributed on April 30. A drawdown request for approximately $12.7M in FTA Section 5309 New Starts funds was processed in April. Both revenue amounts will be incorporated in the financial data for next month's report. See Section 2.2 for project funding details.

1.6.3 Full Funding Grant Agreement (FFGA) Status

HART is awaiting FTA's publication of the FY 2013 New Starts allocation in the Federal Register to confirm the expected amount of approximately $236M. The $236M is less than the $250M FY 2013 increment identified in the FFGA, but it will not negatively impact the Project's cash flow. The $14M shortfall ($250M minus $236M) will be recovered in a future year's allocation.

1.7 HART Board of Directors Meetings and Events in April

HART Board of Directors Meeting

Thursday, April 11, 2013, 8:30 a.m., Oahu Transit Services, Paratransit Bldg., 2nd Floor, 611 Middle St.
Open to the Public.

2 PROJECT BUDGET AND SCHEDULE

2.1 Project Budget

The FFGA Baseline Project Budget is $5.122B, which includes approximately $644M in allocated and unallocated contingencies and $173M in finance charges. Reported budget amounts relate to the FTA New Starts project and exclude $42M in FTA-ineligible financing costs that will be incurred beyond FFGA completion.

The total committed amount as of March 29 was $2.260B (including awarded design contract allowances of $5.4M, but excluding uncommitted contingencies and finance charges), or 53.1% of the FFGA Baseline Project Budget (excluding uncommitted contingencies and finance charges).

In March 2013, the Project incurred $30.5M in costs (actual expenditures plus approved requests for payment as of the cost data date of March 29). This brought the total incurred cost to date to $655.9M, or 15.4% of the Project Budget (excluding contingencies and finance charges). The FFGA Financial Plan (*Honolulu Rail Transit Project Final Financial Plan for Full Funding Grant Agreement*, June 2012, Tables 2-4 and A-1) projected cumulative capital expenditures of $1.3B through FY2013.

The total amount Authorized for Expenditure (AFE) by way of Notices to Proceed (NTPs) was $1.077B, or 25.3% of the FFGA Project Budget (excluding uncommitted contingencies and finance charges).

To date, 23 of the 42 planned design, construction and specialty consultant contracts have been awarded. A re-packaging of the contracts has decreased the total number of planned design, construction and specialty consultant contracts from 49 per the baselined Contract Packaging Plan to 43. Additionally, by way of exercising a contract option for the HDOT Design Coordination Consultant, another contract was eliminated, reducing the number of contracts to 42. The Contract Packaging Plan will be updated to reflect the re-packaging.

The Baseline Budget for Total Project Contingency is approximately $644M and consists of the following elements:

1) Allocated Contingency ($540.1M). This contingency category represents amounts assigned (allocated) to the various contract packages.

2) Unallocated Contingency ($101.9M). This contingency category represents amounts not assigned to a particular contract package.

3) Allowances ($1.6M). This contingency category represents allocated contingency amounts for design services that have been obligated/committed through contract awards.

The overall Project Contingency amount increases as a result of favorable contract awards. Budget savings occur when the budgeted amount for a contract is higher than the actual contract amount. The savings are transferred into Project Contingency thereby increasing the Current Project Contingency available for use.

The approximately $644M Baseline Budget for Total Project Contingency does not include amounts for known changes yet to be finalized at the time the Bottom-Up Estimate (BUE) was prepared. Estimated amounts for known changes were included in the BUE base contract values, but classified as “contingency” in order to process all changes using a consistent methodology of transferring from contingency to the appropriate cost code when a change order is executed.

During the March 2013 cost reporting period, HART executed one change order for approximately $.520M on the Maintenance Storage Facility Design-Build contract (DB-200), $.465M of the change order draws against the Project Contingency, the remaining $.05M draws down the "known" changes balance of contingency. A Contract Amendment for $3,885 was also executed on the Farrington Highway Stations Group Final Design which also draws down on Project Contingency. The net result of the executed change order and contract amendment for this period results in a Current Project Contingency Budget of $652.2M, as shown below and detailed in project cost report in Figure 10 starting on page 16.

1) $545M = Allocated Contingency
2) $101.9M = Unallocated Contingency
3) $5.4M = Allowances

The detailed project cost report by SCC Level 2 presented in Figure 10 on page 16 includes $44.5M for known changes and presents the total available contingency as $696.7M ($652.2M + $44.5M).

HART's proposed cost contingency drawdown plan is discussed in Section 2.4 and presented in Figure 12 on page 23.

2.2 Project Revenue and Costs

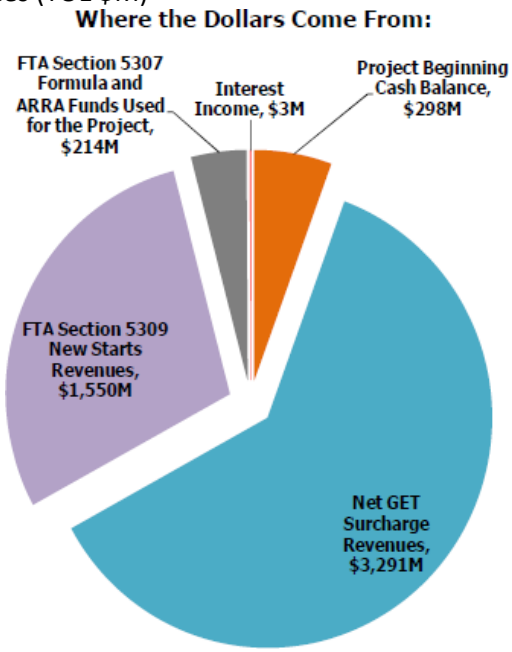
Total cash received to date since the start of Preliminary Engineering is $1,029M.

The FFGA Financial Plan (Table A-1 *Capital Plan Cash Flows*) projects Net GET Surcharge Revenue of $684M for FYs 2010-2013. Approximately $595.5M has been received since the Project's entry into FTA's Preliminary Engineering phase of project development. See Figure 5 below for Project funding and Figure 6 for planned versus received funding.

Project revenue is presented against costs incurred as of the March 29 cost data date in Figure 7 on page 11.

Project costs are detailed in Figure 8, Figure 9 and Figure 10 on pages 12 through 18. Cost reports are run from the HART Contract Management System (CMS). Figure 8 presents costs for each contract by HART CPP contract number. Figure 9 on page 15 and Figure 10 on page 16 present summarized and detailed project costs by FTA SCC.

Figure 5. Project Funding Sources (YOE $M)



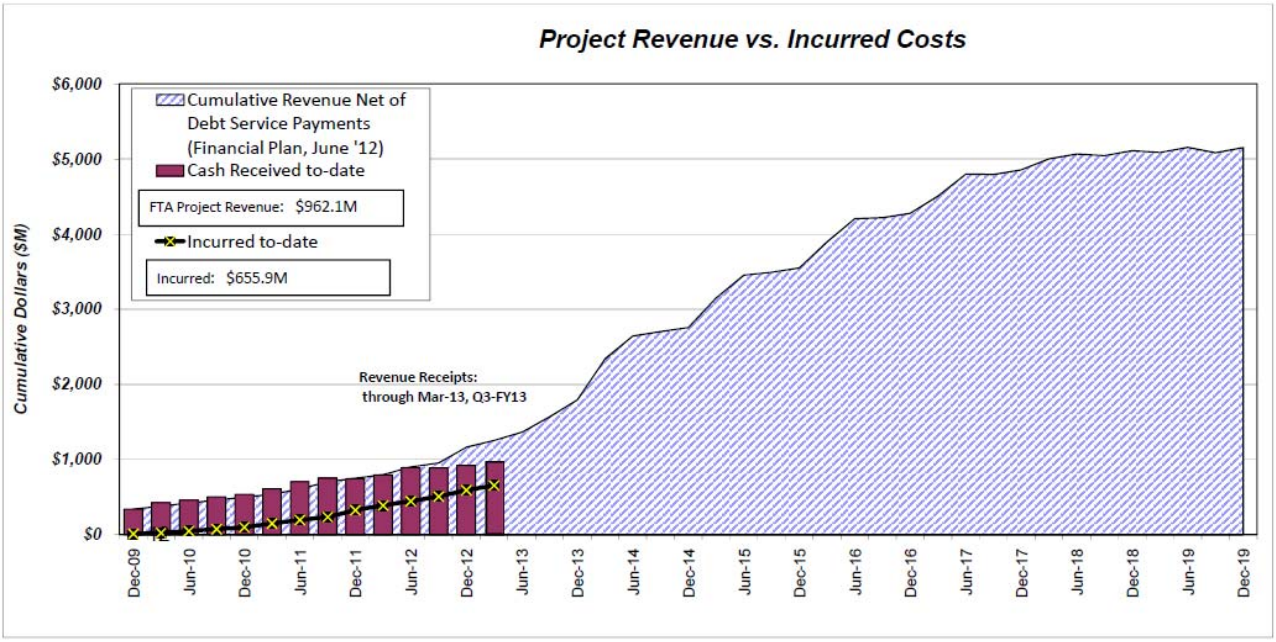
Source: FFGA Financial Plan, p. 2-1

Figure 6. Planned vs. Received Project Funding

Funding Source	Planned[1] ($YOE M)	Received to Date ($M)
FTA Section 5307 Formula Funds, including ARRA	214	4
Interest Income on Cash Balance	3	1
Beginning Project Cash Balance[2]	298	298
FTA Section 5309 New Starts Revenue	1,550	131
Net General Excise Tax (GET) Surcharge revenues FY2010-FY2023	3,291	595
Total	**5,356**	**1,029**

[1] FFGA Financial Plan, Table A-1 *Capital Plan Cash Flows*.
[2] Beginning Project Cash Balance at Entry into Preliminary Engineering (PE) on October 16, 2009 (the FTA Project start date) = GET, investment and miscellaneous income minus pre-PE expenditures.

Figure 7. Project Revenue versus Incurred Costs



Planned Funding levels as per the June 2012 FFGA Finance Plan
Data date for Revenue & Incurred Cost = March 29, 2013

Figure 8. Project Costs by Contract

HONOLULU AUTHORITY for RAPID TRANSPORTATION

Costs Reported as of Month Ending: March 2013

Project Monthly Cost Report by Contract - One Line Summary

Page: 1 of 3

		A	B	C=A+B	D	E	F
		COMMITTED			AFE	INCURRED	PERCENT
CPP No	Title	Original	Changes	Current *	AFE**	Incurred To Date	%
ART	Project Wide ART	0	0	0	0	0	0%
CCH-100	Inactive Hart/City CCH	15,348,443	0	15,348,443	0	15,348,443	100%
CCH-101	HART/ City Dept of BFS	105,092	0	105,092	0	0	0%
CCH-102	HART/ City DDC Land Division	256,201	0	256,201	0	0	0%
CCH-107	HART/ City Corporation Counsel (COR)	1,893,013	0	1,893,013	0	353,086	19%
CCH-108	Board of Water Supply (BWS)	0	0	0	0	0	0%
DB-120	West Oahu/Farrington Hwy Guideway	482,924,000	54,847,469	537,771,469	316,005,535	173,466,598	32%
DB-200	Maintenance & Storage Facility DB	195,258,000	20,117,751	215,375,751	148,406,485	50,125,174	23%
DB-320	Kamehameha Hwy Guideway DB	372,150,000	4,215,981	376,365,981	166,382,062	83,068,340	22%
DBB-185	WOFH/KHSG Construction	0	0	0	0	0	0%
DBB-275	Pearl Highlands Pkg. Str./BTC Cnstr.	0	0	0	0	0	0%
DBB-470	Airport Station Group Cnstr.	0	0	0	0	0	0%
DBB-505	Airport Section Utilities Cnstr.	0	0	0	0	0	0%
DBB-510	City Center Section Utilities Cnstr.	0	0	0	0	0	0%
DBB-520	Airport-City Center Guideway Cnstr.	0	0	0	0	0	0%
DBB-580	Dillingham/Kaka'ako SG Contruction	0	0	0	0	0	0%
DBB-600	UHWO PnR/Hoopili Stn Finishes Cnstr.	0	0	0	0	0	0%
DBOM-920	Core Systems Design Build O/M	573,782,793	56,644	573,839,437	97,975,035	27,064,130	5%
FD-140	West Oahu Station Group Final Design	7,789,000	0	7,789,000	4,594,398	2,696,127	35%
FD-240	Farrington Highway Stations Group FD	5,500,696	2,507,349	8,008,045	7,711,060	6,752,075	84%
FD-245	Pearl Highlands Pkg. Str./BTC FD	0	0	0	0	0	0%
FD-340	Kamehameha Hwy Station Group H2R2 FD	8,702,592	0	8,702,592	3,024,525	1,859,113	21%
FD-430	Airport Sect. Guideway/Utilities FD	38,840,960	275,000	39,115,960	31,341,791	17,404,742	44%
FD-440	Airport Station Group FD	10,177,365	0	10,177,365	2,878,543	2,780,334	27%
FD-530	City Center Guideway/Utilities FD	43,948,220	0	43,948,220	15,949,421	5,474,095	12%
FD-550	Dillingham and Kaka'ako SG FD	0	0	0	0	0	0%
FD-600	UHWO Pkg-Hoopili Station Finishes FD	0	0	0	0	0	0%
HRT-200	HART Labor	19,251,942	0	19,251,942	0	19,251,942	100%
HRT-201	HART ODC	639,047	0	639,047	0	639,047	100%
MI-930	Elevators & Escalators Install/Maint	0	0	0	0	0	0%

* Current Committed = Original Contract + CCO/Amendment

** AFE = Authorized For Expenditure (Latest NTP Amounts or equal to current commitment Plus Executed Change Orders/Amendments)

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HONOLULU AUTHORITY for RAPID TRANSPORTATION

Costs Reported as of Month Ending: March 2013

Project Monthly Cost Report by Contract - One Line Summary

		A	B	C=A+B	D	E	F
		COMMITTED			AFE	INCURRED	PERCENT
CPP No	Title	Original	Changes	Current *	AFE**	Incurred To Date	%
MM-280	WOFH/KHSG CE&I	0	0	0	0	0	0%
MM-385	Pearl Highlands Garage and Ramps CEI	0	0	0	0	0	0%
MM-500	Airport-City Center Utilities CEI	0	0	0	0	0	0%
MM-525	Airport-City Center Guideway CEI	0	0	0	0	0	0%
MM-590	Aiport/Dillingham/Kaka'ako SG CE&I	0	0	0	0	0	0%
MM-600	UHWO Pkg-Hoopili Stn Finishes CEI	0	0	0	0	0	0%
MM-900	Program Mgt Support Conslt (PMSC-1)	36,727,162	0	36,727,162	20,700,000	20,643,968	56%
MM-901	Program Mgt Support Conslt (PMSC-2)	33,376,897	0	33,376,897	11,240,790	9,609,797	29%
MM-905	MM-905 Gen Engrg Conslt EIS/PE	0	78,564,942	78,564,942	78,564,942	73,622,452	94%
MM-910	MM-910 Gen Engrg Conslt FD-Construct	150,000,000	0	150,000,000	150,000,000	96,394,136	64%
MM-915	HDOT Traffic Mgmt. Consult.	1,600,000	-600,000	1,000,000	500,000	343,911	34%
MM-920	HDOT Coordination Conslt WOFH	3,000,000	7,500,000	10,500,000	6,000,000	4,448,149	42%
MM-921	HDOT Coordination Conslt KHG	10,000,000	-1,400,000	8,600,000	4,000,000	252,092	3%
MM-922	HDOT Coord. Conslt. Airport	12,000,000	-5,600,000	6,400,000	3,000,000	583,216	9%
MM-923	HDOT Coordination Conslt City Center	0	0	0	0	0	0%
MM-925	HDOT Labor - Highway Group	100,000	0	100,000	100,000	98,691	99%
MM-926	HDOT Labor - Airport Group	0	0	0	0	0	0%
MM-930	HDOT State SOA Manager & Consultant	1,272,400	583,142	1,855,542	905,435	142,024	8%
MM-935	Real Estate Consultant	3,000,000	0	3,000,000	1,340,930	258,205	9%
MM-940	Kako'o Consultant	1,000,000	0	1,000,000	284,098	118,249	12%
MM-945	On-Call Contractor	0	0	0	0	0	0%
MM-946	On-Call Hazmat Removal Contractor	3,000,000	0	3,000,000	1,000,000	205,393	7%
MM-950	OCIP Consultant	1,250,000	0	1,250,000	437,500	359,375	29%
MM-951	Owner-Controlled Insurance Program	0	0	0	0	0	0%
MM-975	LEED Commissioning Services for MSF	278,630	0	278,630	278,630	58,660	21%
OTHER	Project Wide	0	0	0	0	0	0%
PA-101	Programmatic Agreement Humanities	0	0	0	0	0	0%
PA-102	Programmatic Agreement HPC	0	0	0	0	0	0%
PA-103	Programmatic Agreement HPC Park Impr	0	0	0	0	0	0%
ROW	Real Estate / Right-of-Way	39,809,766	0	39,809,766	0	39,809,766	100%

* Current Committed = Original Contract + CCO/Amendment

** AFE = Authorized For Expenditure (Latest NTP Amounts or equal to current commitment Plus Executed Change Orders/Amendments)

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HONOLULU AUTHORITY for RAPID TRANSPORTATION

Costs Reported as of Month Ending: March 2013

Project Monthly Cost Report by Contract - One Line Summary

		A	B	C=A+B	D	E	F
		COMMITTED			AFE	INCURRED	PERCENT
CPP No	Title	Original	Changes	Current *	AFE**	Incurred To Date	%
UTIL	Utilities by Utility Companies	25,576,313	150,000	25,726,313	3,959,000	2,693,094	10%
Total Project:		**2,098,558,532**	**161,218,278**	**2,259,776,810**	**1,076,580,179**	**655,924,422**	

* Current Committed = Original Contract + CCO/Amendment

** AFE = Authorized For Expenditure (Latest NTP Amounts or equal to current commitment Plus Executed Change Orders/Amendments)

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Figure 9. Project Costs by SCC – Summary

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HONOLULU AUTHORITY for RAPID TRANSPORTATION

Costs Reported as of Month Ending: March 2013

Project Monthly Cost Report by SCC Summary

Page: 1 of 1

		A	B	C=A+B	D	E	F	G	H=C-G	I
		BUDGET			COMMITTED	AFE	ESTIMATE AT COMPLETION			INCURRED
SCC	Title	Baseline	Transfers	Current	Current *	AFE**	Changes ID'd***	Est. At Completion****	Variance	Incurred To Date
1. Subtotal 10 - 80 SCC Costs										
10	Guideway & Track Elements	1,114,215,147	20,106,633	1,134,321,780	520,526,363	10,785,802	435,555	1,134,321,780	0	26,152,929
20	Stations,Stops,Terminals,Intermoc	421,804,740	(21,400,000)	400,404,740	0	0	0	400,404,740	0	0
30	Support Facilities;Yards,Shops,A	92,535,015	9,414,376	101,949,391	101,949,391	5,605,727	0	101,949,391	0	4,785,318
40	Sitework & Special Conditions	983,178,121	(46,113,209)	937,064,912	523,952,913	61,229,153	(20,200,783)	937,064,912	0	210,350,113
50	Systems	221,284,301	(682,848)	220,601,453	205,441,240	59,020	0	220,601,453	0	0
60	ROW, Land, Existing Improvement	197,397,947	277,800	197,675,747	43,087,566	933,730	0	197,675,747	0	40,345,772
70	Vehicles	186,829,020	3,199,277	190,028,297	190,028,297	0	0	190,028,297	0	212,900
80	Professional Services	1,087,830,119	(17,975,040)	1,069,855,079	669,402,784	84,973,450	(18,706,467)	1,069,855,079	0	374,077,390
Subtotal:		4,305,074,410	(53,173,011)	4,251,901,399	2,254,388,555	163,586,882	(38,471,695)	4,251,901,399	0	655,924,422
2. NTP										
NTP	Authorized For Expenditure	0	0	0	0	913,611,431	0	0	0	0
Subtotal:		0	0	0	0	913,611,431	0	0	0	0
3. Contingency										
CNTR	Contingency	541,689,343	53,173,011	594,862,354	5,388,254	(618,134)	283,083,590	594,862,354	0	0
PRJ	Contingency	101,871,170	0	101,871,170	0	0	0	101,871,170	0	0
Subtotal:		643,560,513	53,173,011	696,733,524	5,388,254	(618,134)	283,083,590	696,733,524	0	0
4. Finance Charges - Eligible										
OTH	Finance Charges	173,058,243	0	173,058,243	0	0	0	173,058,243	0	0
Subtotal:		173,058,243	0	173,058,243	0	0	0	173,058,243	0	0
FTA TOTAL PROJECT COSTS		5,121,693,166	0	5,121,693,166	2,259,776,810	1,076,580,179	244,611,895	5,121,693,166	0	655,924,422
4. Finance Charges -Ineligible Costs										
FINC	Finance Charges	42,000,000	0	42,000,000	0	0	0	42,000,000	0	0
Subtotal:		42,000,000	0	42,000,000	0	0	0	42,000,000	0	0
INELIGIBLE COSTS		42,000,000	0	42,000,000	0	0	0	42,000,000	0	0
Total Project:		5,163,693,166	0	5,163,693,166	2,259,776,810	1,076,580,179	244,611,895	5,163,693,166	0	655,924,422

* Current Committed = Original Contract + CCO/Amendment

** AFE = Authorized For Expenditure (Latest NTP Amounts or equal to current commitment Plus Executed Change Orders/Amendments)

*** Changes Identified= Pending + Probable + Potential Changes

**** Est. At Completion = Original Contract + CCO/Amendments + Changes Identified

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Figure 10. Project Costs by SCC – Level 2

HART
HONOLULU AUTHORITY for RAPID TRANSPORTATION

Costs Reported as of Month Ending: March 2013

Project Monthly Cost Report SCC Level 2

Page: 1 of 3

		A	B	C=A+B	D	E	F	G	H=C-G	I
		BUDGET			COMMITTED	AFE	ESTIMATE AT COMPLETION			INCURRED
SCC	Title	Baseline	Transfers	Current	Current *	AFE**	Changes ID'd***	Est. At Completion****	Variance	Incurred To Date
1. Subtotal 10 - 80 SCC Costs										
10	Guideway & Track Elements	1,114,215,147	20,106,633	1,134,321,780	520,526,363		435,555	1,134,321,780	0	26,152,929
10.04	Guideway: Aerial Structure	1,022,380,671	16,747,670	1,039,128,341	434,840,724	741,273	435,555	1,039,128,341	0	7,377,062
10.08	Guideway: Retained Cut or Fill	7,492,944	(1,056,688)	6,436,256	6,436,256	0	0	6,436,256	0	0
10.09	Track: Direct Fixation	79,347,205	3,480,624	82,827,829	75,020,633	10,013,653	0	82,827,829	0	18,775,867
10.11	Track: Ballasted	3,293,724	(595,849)	2,697,875	2,697,875	0	0	2,697,875	0	0
10.12	Track:Special (Switches, turnouts)	1,700,603	1,530,876	3,231,479	1,530,876	30,876	0	3,231,479	0	0
20	Stations,Stops,Terminals,Intermod	421,804,740	(21,400,000)	400,404,740	0		0	400,404,740	0	0
20.01	At-grade station, stop, shelter,..	6,111,332	0	6,111,332	0	0	0	6,111,332	0	0
20.02	Aerial Station, stop, shelter,mall	294,563,457	(21,400,000)	273,163,457	0	0	0	273,163,457	0	0
20.06	Automobile parking multi-story str	66,408,765	0	66,408,765	0	0	0	66,408,765	0	0
20.07	Elevators, Escalators	54,721,186	0	54,721,186	0	0	0	54,721,186	0	0
30	Support Facilities;Yards,Shops, A	92,535,015	9,414,376	101,949,391	101,949,391		0	101,949,391	0	4,785,318
30.02	Light Maintenance Facility	7,591,888	(5,095)	7,586,793	7,586,793	0	0	7,586,793	0	0
30.03	Heavy Maintenance Facility	38,099,138	(242,108)	37,857,030	37,857,030	0	0	37,857,030	0	2,657,874
30.04	Storage or Maintenance of Way Buil	7,797,460	(61,550)	7,735,910	7,735,910	0	0	7,735,910	0	73,606
30.05	Yard and Yard Track	39,046,529	9,723,129	48,769,658	48,769,658	5,605,727	0	48,769,658	0	2,053,838
40	Sitework & Special Conditions	983,178,121	(46,113,209)	937,064,912	523,952,913		(20,200,783)	937,064,912	0	210,350,113
40.01	Demolition, Clearing, Earthwork	29,980,158	(2,308,147)	27,672,011	8,022,358	1,025,233	0	27,672,011	0	6,614
40.02	Site Utilities, Utility Relocation	299,449,756	3,969,642	303,419,398	98,025,174	5,491,957	(19,809,479)	303,419,398	0	8,122,769
40.03	Haz. mat'l, contam'd soil removal	9,199,237	(5,421,634)	3,777,603	3,016,085	916,104	(391,304)	3,777,603	0	221,478
40.04	Environmental Mitigation	26,979,122	4,976,801	31,955,923	16,543,497	902,708	0	31,955,923	0	3,430,633
40.05	Site structures, retaining walls,	7,998,960	1,062,414	9,061,374	8,902,848	900,019	0	9,061,374	0	575,338
40.06	Pedestrian/bike access/landscaping	41,073,897	799,143	41,873,040	5,049,834	953,419	0	41,873,040	0	0
40.07	Auto, bus, van accessways	181,979,367	(11,508,007)	170,471,360	35,558,916	1,690,419	0	170,471,360	0	507,888
40.08	Temporary Facilities/Indirect Cost	386,517,624	(37,683,421)	348,834,203	348,834,203	55,649,427	0	348,834,203	0	197,485,393
50	Systems	221,284,301	(682,848)	220,601,453	205,441,240		0	220,601,453	0	0
50.01	Train control and signals	81,982,556	420,090	82,402,646	82,402,646	0	0	82,402,646	0	0
50.02	Traffic signals and crossing prot.	10,458,226	(206,890)	10,251,336	0	0	0	10,251,336	0	0
50.03	Traction power supply: substation	29,500,926	1,526,385	31,027,311	31,027,311	59,020	0	31,027,311	0	0
50.04	Traction power distribution: cate	32,878,150	(2,881,277)	29,996,873	25,087,996	0	0	29,996,873	0	0
50.05	Communications	53,691,339	560,058	54,251,397	54,251,397	0	0	54,251,397	0	0

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HONOLULU AUTHORITY for RAPID TRANSPORTATION

Costs Reported as of Month Ending: March 2013

Project Monthly Cost Report SCC Level 2

		A	B	C=A+B	D	E	F	G	H=C-G	I
		BUDGET			COMMITTED	AFE	ESTIMATE AT COMPLETION			INCURRED
SCC	Title	Baseline	Transfers	Current	Current *	AFE**	Changes ID'd***	Est. At Completion****	Variance	Incurred To Date
1. Subtotal 10 - 80 SCC Costs										
50	Systems	221,284,301	(682,848)	220,601,453	205,441,240		0	220,601,453	0	0
50.06	Fare collection system and equipme	9,159,277	58,822	9,218,099	9,218,099	0	0	9,218,099	0	0
50.07	Central Control	3,613,827	(160,036)	3,453,791	3,453,791	0	0	3,453,791	0	0
60	ROW, Land, Existing Improvement	197,397,947	277,800	197,675,747	43,087,566		0	197,675,747	0	40,345,772
60.01	Purchase or lease of real estate	179,360,664	0	179,360,664	38,094,545	655,930	0	179,360,664	0	38,094,545
60.02	Relocation of existing households	18,037,283	277,800	18,315,083	4,993,022	933,730	0	18,315,083	0	2,251,227
70	Vehicles	186,829,020	3,199,277	190,028,297	190,028,297		0	190,028,297	0	212,900
70.01	Light Rail	166,721,386	4,400,967	171,122,353	171,122,353	0	0	171,122,353	0	0
70.06	Non-revenue vehicles	14,346,923	(1,320,375)	13,026,548	13,026,548	0	0	13,026,548	0	212,900
70.07	Spare parts	5,760,711	118,685	5,879,396	5,879,396	0	0	5,879,396	0	0
80	Professional Services	1,087,830,119	(17,975,040)	1,069,855,079	669,402,784		(18,706,467)	1,069,855,079	0	374,077,390
80.01	Preliminary Engineering	94,055,262	23,898,043	117,953,305	108,820,986	20,425,183	0	117,953,305	0	109,593,849
80.02	Final Design	228,321,632	(41,337,108)	186,984,524	151,552,160	969,894	293,243	186,984,524	0	44,256,650
80.03	Project Management Design & Cons	363,849,768	(1,366,807)	362,482,961	271,829,885	62,493,796	(17,323,901)	362,482,961	0	179,556,845
80.04	Constr. Admin. & Management	199,656,728	(1,576,800)	198,079,928	35,665,055	717,721	0	198,079,928	0	28,816,307
80.05	Professional Liability & other Ins	46,549,724	(3,561,230)	42,988,494	1,754,560	628,521	(900,000)	42,988,494	0	851,311
80.06	Legal; Permits,Review Fees ect..	67,641,005	32,777	67,673,782	31,797,428	710,941	0	67,673,782	0	6,783,290
80.07	Surveys, Testing, Investigation, I	21,759,336	7,128,678	28,888,014	20,075,644	194,521	0	28,888,014	0	2,491,776
80.08	Start up	65,996,664	(1,192,593)	64,804,071	47,907,069	194,521	(775,809)	64,804,071	0	1,727,363
NT	Authorized For Expenditure	0	0	0	0		0	0	0	0
NTP	Notice To Proceed	0	0	0	0	913,611,431	0	0	0	0
Subtotal:		4,305,074,410	(53,173,011)	4,251,901,399	2,254,388,555	1,077,198,313	(38,471,695)	4,251,901,399	0	655,924,422
2. Contingency										
CNTR	Contingency	541,689,343	53,173,011	594,862,354	5,388,254		283,083,590	594,862,354	0	0
90.02	Allocated Contract Contingency	540,101,329	4,883,238	544,984,567	0	0	243,389,825	544,984,567	0	0
90.03	Allowances	1,588,014	3,800,240	5,388,254	5,388,254	(618,134)	3,348,304	5,388,254	0	0
90.07	Known Change Contingency	0	44,489,533	44,489,533	0	0	36,345,461	44,489,533	0	0
PRJ	Contingency	101,871,170	0	101,871,170	0		0	101,871,170	0	0
90.01	Unallocated Project Contingency	101,871,170	0	101,871,170	0	0	0	101,871,170	0	0
Subtotal:		643,560,513	53,173,011	696,733,524	5,388,254	(618,134)	283,083,590	696,733,524	0	0

* Current Committed = Original Contract + CCO/Amendment

** AFE = Authorized For Expenditure (Latest NTP Amounts or equal to current commitment Plus Executed Change Orders/Amendments)

*** Changes Identified= Pending + Probable + Potential Changes

**** Est. At Completion = Original Contract + CCO/Amendments + Changes Identified

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HONOLULU AUTHORITY for RAPID TRANSPORTATION

Costs Reported as of Month Ending: March 2013

Project Monthly Cost Report SCC Level 2

		A	B	C=A+B	D	E	F	G	H=C-G	I
		BUDGET			COMMITTED	AFE	ESTIMATE AT COMPLETION			INCURRED
SCC	Title	Baseline	Transfers	Current	Current *	AFE**	Changes ID'd***	Est. At Completion****	Variance	Incurred To Date
3. Finance Charges - Eligible										
OTH	Finance Charges	173,058,243	0	173,058,243	0		0	173,058,243	0	0
100.1	Finance Charges:Project-Eligible	173,058,243	0	173,058,243	0	0	0	173,058,243	0	0
Subtotal:		173,058,243	0	173,058,243	0	0	0	173,058,243	0	0
FTA TOTAL PROJECT COSTS		5,121,693,166	0	5,121,693,166	2,259,776,810	1,076,580,179	244,611,895	5,121,693,166	0	655,924,422
4. Finance Charges -Ineligible Costs										
FINC	Finance Charges	42,000,000	0	42,000,000	0		0	42,000,000	0	0
100.2	FTA Non-Eligible Costs	42,000,000	0	42,000,000	0	0	0	42,000,000	0	0
Subtotal:		42,000,000	0	42,000,000	0	0	0	42,000,000	0	0
INELIGIBLE COSTS		42,000,000	0	42,000,000	0	0	0	42,000,000	0	0
Total Project:		5,163,693,166	0	5,163,693,166	2,259,776,810	1,076,580,179	244,611,895	5,163,693,166	0	655,924,422

* Current Committed = Original Contract + CCO/Amendment

** AFE = Authorized For Expenditure (Latest NTP Amounts or equal to current commitment Plus Executed Change Orders/Amendments)

*** Changes Identified= Pending + Probable + Potential Changes

**** Est. At Completion = Original Contract + CCO/Amendments + Changes Identified

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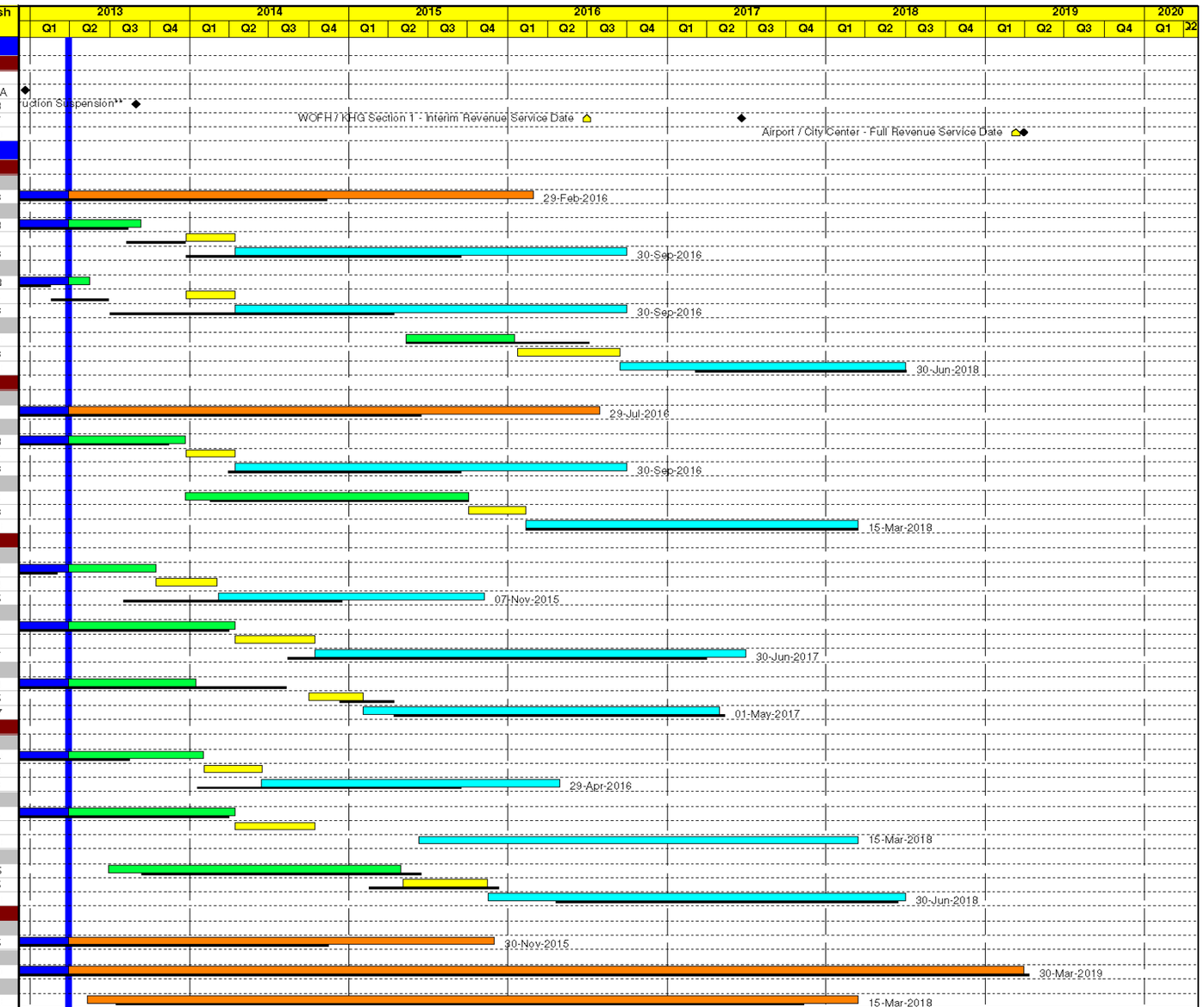
2.3 Project Schedule

The HRTP Master Project Schedule (MPS) has been updated as of March 29, 2013 as shown in the Master Project Schedule Summary (MPSS) in Figure 11 starting on the next page. This was statused against the FFGA Baseline MPS. The baseline and actual/planned durations of each contract are displayed for comparison.

Figure 11. HRTP Master Project Schedule Summary (MPSS)

Activity Name	Current Start	Current Finish
KEY DATA		
MILESTONES		
Letter of No Prejudice #2 - LONP 2	06-Feb-2012 A	
Full Funding Grant Agreement - (FFGA)		19-Dec-2012 A
AIS Complete **Lift Construction Suspension**		30-Aug-2013
WOFH / KHG Section 1 - Interim Revenue Service Date		20-Jun-2017
Airport / City Center - Full Revenue Service Date		30-Mar-2019
CONTRACTS - DESIGN & CONSTRUCTION		
WEST OAHU / FARRINGTON HIGHWAY (WOFH) - SECTION 1		
WOFH Guideway & Utilities		
SUMM: DB-120 - WOFH Guideway - Design & Construction (Design-Build)	01-Dec-2009 A	29-Feb-2016
West Oahu Station Group (WOSG)		
SUMM: FD-140 - West Oahu Station Group - Design	15-Jun-2012 A	11-Sep-2013
SUMM: West Oahu Station Group - Bid & Award	23-Dec-2013	14-Apr-2014
SUMM: DBB-185 - West Oahu Station Group - Construction	15-Apr-2014	30-Sep-2016
Farrington Hwy Station Group (FHSG)		
SUMM: FD-240 - Farrington Highway Station Group - Design	12-Jan-2011 A	15-May-2013
SUMM: Farrington Hwy Stations Group - Bid & Award	23-Dec-2013	14-Apr-2014
SUMM: DBB-185 - Farrington Highway Station Group - Construction	15-Apr-2014	30-Sep-2016
UH West Oahu Park n Ride & Ho`opili Station Finishes		
SUMM: FD-600 UH West Oahu Park and Ride and Ho`opili Station Finishes - Design	12-May-2015	15-Jan-2016
SUMM: UH West Oahu Park n Ride & Ho`opili Station Finishes - Bid & Award	24-Jan-2016	14-Sep-2016
SUMM: DBB-600 UH West Oahu Park and Ride / Ho`opili Station Finishes - Constructi	15-Sep-2016	30-Jun-2018
KAMEHAMEHA HIGHWAY (KH) - SECTION 2		
Kamehameha Highway Guideway & Utilities		
SUMM: DB-320 - KHG Guideway - Design & Construction (Design-Build)	12-Jul-2011 A	29-Jul-2016
Kamehameha Highway Stations		
SUMM: FD-340 - Kamehameha Highway Station Group - Design	26-Nov-2012 A	20-Dec-2013
SUMM: KHSG - Bid & Award	23-Dec-2013	14-Apr-2014
SUMM: DBB-185 - KHSG Station Group - Construction	15-Apr-2014	30-Sep-2016
Pearl Highlands Parking Structure & Ramps		
SUMM: FD-245 - Pearl Highlands Parking Structure & H2 Ramps - Design	21-Dec-2013	01-Oct-2015
SUMM: KHSG - Bid & Award	02-Oct-2015	11-Feb-2016
SUMM: DBB-275 - Pearl Highlands Parking Structure & H2 Ramps - Construction	11-Feb-2016	15-Mar-2018
AIRPORT - SECTION 3		
Airport Utility Relocation		
SUMM: FD-430 - Airport Utilities - Design	05-Jan-2012 A	15-Oct-2013
SUMM: Airport Utilities - Bid & Award	16-Oct-2013	05-Mar-2014
SUMM: DBB-505 - Airport Utilities - Construction	06-Mar-2014	07-Nov-2015
Airport Guideway		
SUMM: FD-430 - Airport Guideway - Design	05-Jan-2012 A	14-Apr-2014
SUMM: Airport Guideway - Bid & Award	15-Apr-2014	15-Oct-2014
SUMM: DBB-520 - Airport Guideway - Construction	15-Oct-2014	30-Jun-2017
Airport Stations		
SUMM: FD-440 - Airport Station Group - Design	14-Nov-2012 A	15-Jan-2014
SUMM: Airport Station Group - Bid & Award	01-Oct-2014	01-Feb-2015
SUMM: DBB-470 - Airport Station Group - Construction	01-Feb-2015	01-May-2017
CITY CENTER (CC) - SECTION 4		
City Center Utility Relocation		
SUMM: FD-530 - City Center Utilities - Design	31-Jul-2012 A	01-Feb-2014
SUMM: City Center Utilities - Bid & Award	02-Feb-2014	15-Jun-2014
SUMM: DBB-510 - City Center Utilities - Construction	15-Jun-2014	29-Apr-2016
City Center Guideway		
SUMM: FD-530 - City Center Guideway - Design	30-Jul-2012 A	14-Apr-2014
SUMM: City Center Guideway - Bid & Award	14-Apr-2014	15-Oct-2014
SUMM: DBB-520 - City Center Guideway - Construction	12-Jun-2015	15-Mar-2018
City Center Stations		
SUMM: FD-550 - Dillingham & Kaka'ako Station Group - Design	28-Jun-2013	01-May-2015
SUMM: Dillingham & Kaka'ako Station Group - Bid & Award	05-May-2015	15-Nov-2015
SUMM: DBB-580 - Dillingham & Kaka'ako Station Group - Construction	16-Nov-2015	30-Jun-2018
PROJECT WIDE - ALL SECTIONS		
Maintenance & Storage Facility (MSF)		
SUMM: DB-200 - MSF - Design & Construction (Design-Build)	25-Jul-2011 A	30-Nov-2015
Core Systems		
SUMM: DBOM-920 - Core Systems - Design & Construction	13-Jan-2012 A	30-Mar-2019
Elevators & Escalators		
SUMM: MI-930 - Elevators and Escalators - Manufacture, Install & Test	10-May-2013	15-Mar-2018



HONOLULU AUTHORITY for RAPID TRANSPORTATION

Design Build
Construction
Design
Bid/Award
Baseline Milestone
Milestone
FFGA Ba...
Actual Work

- Design Duration = NTP to Bid Ready
- Construction Durations (DBB) = NTP to Substantial Completion

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MPS Summary
Design & Construction Contracts

2.4 Contingency Management

The Risk and Contingency Management Plan (RCMP) has been revised for the FFGA and is in final states of review and completion. It is consistent with the FFGA submittals, including the CPP, MPS, Project Budget and Financial Plan. As part of the final review, the cost and schedule contingency drawdown curves were updated. These curves establish minimum and buffer zone levels of cost and schedule contingency in accordance with FTA recommendations. Over the course of the project, if the cost or schedule contingency trend into the buffer zone (the area above the minimum contingency), Project Management will immediately implement actions to maintain the level of contingency appropriate for the project stage.

As discussed in Section 2.1, the Current Project Contingency Budget is $652.2M. Contingency is affected by the following:

1) The budgeted amount for a contract package is lower or higher than the actual executed contract amount. Contingency will increase if the difference between the budgeted and actual contract amounts is lower, and vice versa if the difference is higher.
2) Increase of a contract amount through the execution of a change order or contract amendment. The appropriate contingency category amount is decreased and transferred to the appropriate SCC.
3) Transfer work scope, e.g. utility relocation, between contract packages through a change order. The scope value from one contract is decreased and transferred to Contingency. Contingency is then decreased by the scope value and transferred to the other contract. Contingency is used as a “holding account” in this instance.
4) Revisions to contract packaging. It is anticipated that the consolidation of future contract packages into a single contract package would result in a budget savings due to the resulting efficiencies from reducing redundant overhead costs. Budget savings would be transferred to Contingency.
5) Utilization of allowance in design contracts. The allowance amount to be utilized will decrease this contingency category and will be transferred to the appropriate SCC.

During the March 2013 cost reporting period, HART executed one change order for approximately $.520M on the Maintenance Storage Facility Design-Build contract (DB-200), $.465M of the change order draws against the Project Contingency, the remaining $.05M draws down the “known” changes balance of contingency. A Contract Amendment for $3,885 was also executed on the Farrington Highway Stations Group Final Design which also draws down on Project Contingency. The net result of the executed Change Order on Allocated Contingency and budget saving transfers for this period results in $652.2M Current Project Contingency Budget as detailed in Section 2.1.

HART and the PMOC continue to hold a monthly breakout session to review changes being considered for each contract. Changes are classified as pending, probable or potential and are summarized as Changes ID’d (Changes Identified) in Project Cost reports. Pending changes are changes that have already been negotiated, have agreements reached and are in the signature/approval process. Probable changes are those already in the change management process that have been quantified to the extent of a HART-GEC estimate and a Contractor estimate with a time-impact evaluation (TIE), where appropriate. Probable changes are likely to have a negotiation strategy memo prepared and negotiations may be underway. Potential changes have only a HART-GEC estimate available to be discussed in more general terms. Finally, possible issues are less-defined, not yet quantified issues identified because they could have a future impact on the budget or timing of work.

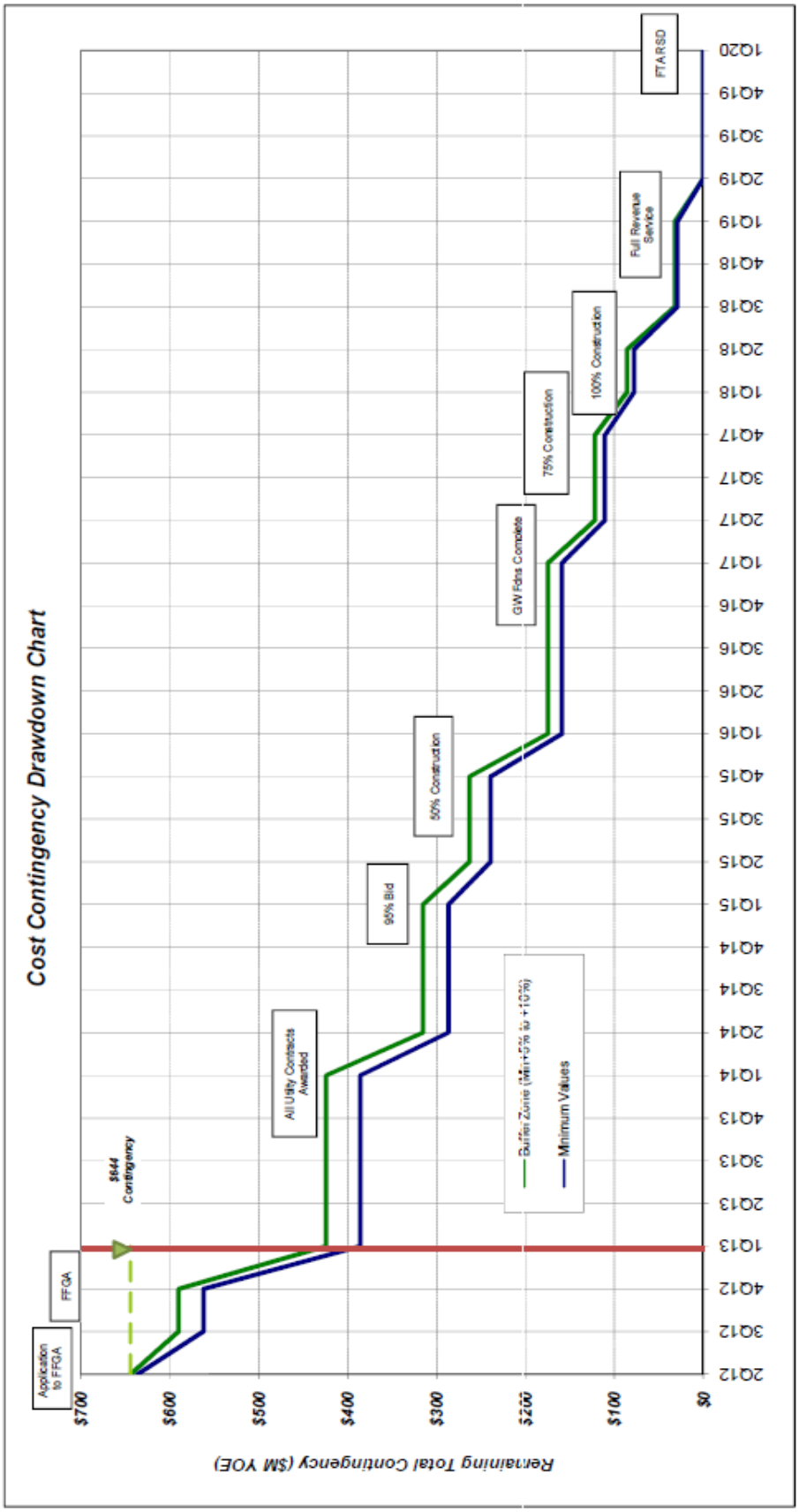
HART continually manages the strategy to avoid or mitigate as well as plan the timing of any potential changes. Breakout session discussions focus on opportunities to reduce costs and accelerate contract-

scheduled activities to attain key milestones earlier than targeted. The session concludes with an overview of the cost and schedule drawdown curves, if and when changes might occur, in order to assess project performance against total project contingencies and buffer float.

The Cost Contingency Drawdown Curve, subject to FTA/PMOC review as part of the RCMP revision process, is presented in Figure 12 on the next page. As of this reporting period, none of the executed change orders reduced the Baseline Budget Contingency amount under $644M.

Known Changes, though tracked separately from the Project Contingency established under the FFGA, functions like contingency and is designated SCC 90.03 on the cost reports. In re-baselining the Project Budget for FFGA, HART generated a bottoms-up estimate (BUE) for each work package identified in the CPP, based on the level of design and current pricing of material, equipment, construction labor, professional services, real estate and all other costs. These revised estimates took into account the reduction of contingencies to reflect the advancement of Final Design since the Preliminary Engineering phase, as reflected in the anticipated base cost of each work package with respect to future risk aspects. Contingency was then allocated in accordance with FTA guidelines and current risk modeling methodologies. Included in the base costs were elements that were considered “known” or pending changes, but were still subject to final negotiations with contractors and execution of change orders. The result was the shifting of contingency budget to the respective contract base estimates as appropriate. The net affect was a reduction of approximately $170M of contingency between the previous Final Design Project Budget and the FFGA Project Budget. This value was “applied” to work packages established under the FFGA and based on the level to which the risk was defined it was either applied as base costs or as a separate contingency for that specific work package which will convert to base costs via change order. Of the $170M, $97M was applied as base costs to multiple contracts and $74M was remaining as “Known” Changes. As it was intended for this reserve, the majority of the change orders executed since the BUE draws against this contingency since these were partially defined already. To date Current Known Changes budget stands at $44.5M down from the original amount of $73.9M as shown in Figure 10.

Figure 12. Draft Cost Contingency Drawdown Chart



3 CONTRACT STATUS

3.1 Procurement Status

Figure 13. Procurement: Design-Build (DB), Design-Build-Operate-Maintain (DBOM) and Manufacture-Install-Maintain (MIM) Contracts

Procurement Tracking Report

Design-Build (DB), Design-Build-Operate-Maintain (DBOM) and Manufacture-Install-Test-Maintain Contracts

Contract #	Contract Name	Sched Ref*	Part 1 Issue RFQ	Part 1 SOQs Due	Part 1 Select BQO	Part 2 Issue RFP	Part 2 Submit Proposals	Part 2 Execute Contract	Issue NTP 1	Issue NTP 1A	Issue NTP 1B	Issue NTP 1C	Issue NTP 2	Issue NTP 3	Issue NTP 4	Contract Completion	Comments
Design-Build Contracts																	
DB-120	West Oahu/Farrington Highway Guideway (WOFH) *[Kiewit Infrastructure West Company (KIWC)]*	CF	*Feb 04 '09*	*Mar 13 '09*	*Mar 21 '09*	*Apr 03 '09*	*Aug 28 '09*	*Nov 11 '09*	*Dec 01 '09*	*Mar 11 '10*	*Mar 23 '10*	*Jun 04 '10*	*Mar 03 '11*	*May 24 '11*	*Feb 06 '12*	*Feb 29 '16*	***NTP1*** : Pre-PE; ***NTP1A*** : Geotech (03/11/10);
		Act	**Feb 04 '09**	**Mar 13 '09**	**Mar 21 '09**	**Apr 03 '09**	**Aug 28 '09**	**Nov 17 '09**	**Dec 01 '09**	**Mar 11 '10**	**Mar 23 '10**	**Jun 04 '10**	**Mar 03 '11**	**May 24 '11**	**Feb 06 '12**		***NTP1B*** : Interim Design/Prelim Engrg (03/23/10);
		B/L	Feb 04 '09	Mar 13 '09	Mar 21 '09	Apr 03 '09	Aug 28 '09	Nov 01 '09	Dec 01 '09	Mar 11 '10	Mar 23 '10	Jun 04 '10	Dec 08 '10	Mar 15 '11	Feb 06 '12	Jan 31 '15	***NTP1C*** : Test Shafts (06/04/10); ***NTP2*** : Utilities;
		Var	-0-	-0-	-0-	-0-	-0-	(16)	-0-	-0-	-0-	-0-	(85)	(70)	-0-	(394)	***NTP3*** : Final Design; ***NTP4A*** : Construction w/o Casting Yd (02/06/12)
																	Substan'l Compl'n = February 2016
DB-200	Maintenance and Storage Facility (MSF) *[Kiewit/Kobayashi Joint Venture (KKJV)]*	CF	*May 29 '09*	*Jul 02 '09*	*Jul 17 '09*	*Jul 24 '09*	*Feb 17 '10*	*Jun 30 '11*	*Jul 25 '11*	-----	-----	-----	*Jan 10 '12*	*Feb 07 '12*	-----	*Nov 30 '15*	***NTP1*** : Prelim Engrg;
		Act	**May 29 '09**	**Jul 02 '09**	**Jul 17 '09**	**Jul 24 '09**	**Feb 17 '10**	**Jun 30 '11**	**Jul 25 '11**	**-----**	**-----**	**-----**	**Jan 10 '12**	**Feb 07 '12**	-----		***NTP2*** : Final Design;
		B/L	May 29 '09	Jul 02 '09	Jul 17 '09	Jul 24 '09	Feb 17 '10	Jun 30 '11	Mar 05 '11	-----	-----	-----	Sep 03 '11	Feb 07 '12	-----	Jan 05 '15	***NTP3*** : Construction
		Var	-0-	-0-	-0-	-0-	-0-	-0-	(142)	-----	-----	-----	(129)	-0-	-----	(329)	***Substan'l Compl'n = November 2015***
DB-320	Kamehameha Guideway (KHG) *[Kiewit Infrastructure West Company (KIWC)]*	CF	*Nov 18 '09*	*Jan 05 '10*	*Feb 15 '10*	*Mar 19 '10*	*Oct 07 '10*	*Jun 30 '11*	*Jul 12 '11*	-----	-----	-----	*Jan 16 '12*	*Feb 07 '12*	-----	*Jul 29 '16*	***NTP1*** : Prelim Engrg;
		Act	**Nov 18 '09**	**Jan 05 '10**	**Feb 15 '10**	**Mar 19 '10**	**Oct 07 '10**	**Jun 30 '11**	**Jul 12 '11**	**-----**	**-----**	**-----**	**Jan 10 '12**	**Feb 07 '12**	-----		***NTP2*** : Final Design;
		B/L	Nov 18 '09	Jan 05 '10	Feb 15 '10	Mar 19 '10	Oct 07 '10	Apr 19 '11	Apr 23 '11	-----	-----	-----	Sep 03 '11	Feb 07 '12	-----	Jul 01 '15	***NTP3A*** : Construction (02/07/12)
		Var	-0-	-0-	-0-	-0-	-0-	(72)	(80)	-----	-----	-----	(129)	-0-	-----	(394)	***Substan'l Compl'n = July 2016***
Design-Bid-Operate-Maintain Contract																	
DBOM-920	Core Systems Contract *[Ansaldo Honolulu JV]*	CF	*Apr 09 '09*	*Jun 05 '09*	*Jul 15 '09*	*Aug 17 '09*	*Jun 07 '10*	*Nov 28 '11*	*Jan 13 '12*	-----			*Jul 15 '12*	*Apr 15 '13*	-----	*Mar 31 '19*	
		Act	**Apr 09 '09**	**Jun 05 '09**	**Jul 15 '09**	**Aug 17 '09**	**Jun 07 '10**	***Nov 28 '11***	**Jan 13 '12**	**Jul 05 '12**			**Jul 05 '12**		-----		
		B/L	Apr 09 '09	Jun 05 '09	Jul 15 '09	Aug 17 '09	Jun 07 '10	Feb 26 '11	Mar 03 '11	-----			Jun 01 '12	Apr 15 '13	-----	Mar 31 '19	
		Var	-0-	-0-	-0-	-0-	-0-	(275)	(316)	-----	-0-	-0-	(34)	-0-	-----	-0-	
Manufacture-Install-Test-Maintain																	
MI-930	Elevators and Escalators	CF	*Aug 17 '12*	*Oct 25 '12*	*Nov 08 '12*	*Dec 17 '12*	*Feb 22 '13*	*May 10 '13*	*May 10 '13*				*Jan 15 '15*	*Mar 15 '16*	-----	*Mar 15 '18*	Installation of first elevator is planned to occur
		Act	**Aug 20 '12**	**Oct 25 '12**	**Nov 09 '12**	**Dec 18 '12**	**Feb 22 '13**								-----		at Leeward Comm College Station Mar '15.
		B/L	Sep 15 '12	Oct 30 '12	Dec 15 '12	Jan 15 '13	Mar 15 '13	Jun 15 '13	Jul 15 '13				Jan 15 '15	Mar 15 '16	-----	Nov 09 '17	*NTP1* : Design/Interface Coordination;
		Var	+26	+5	+36	+28	+21	+36	+66	-0-	-0-	-0-	-0-	-0-	-----	(126)	*NTP2* : Manufacturing; *NTP3* Installation/Testing
																	Addendum No. 9; Part 2 Issued 01/25/13

[Successful Contractor]

*** Schedule Reference:**

CF = *Current Forecast* ***AIS Delay Impacts incorporated into the Current Forecast.***
ACT = ACTUAL **Completed** **Achieved this Month**
B/L = Baseline Master Project Schedule
[Note: B/L reflects the re-baselined Contract Packaging Plan (Revision 3, Mar 30 '12) and the re-baselined Master Project Schedule (Revision 4, Mar 30 '12).]
Var = Variance of (Baseline Master Project Schedule) Less *(Current Forecast)*
+Ahead/(Behind)/-0- versus the B/L Master Project Schedule

Notes:

WOFH: NTP4A: Construction w/o Casting Yard 02/06/2012
KHG: NTP3A: Construction 02/07/2012

Baselined (as *reflected in the Master Project Schedule, Revision 4, March 30, 2012)*

Figure 14. Procurement: Final Design (FD) Contracts

Procurement Tracking Report

Final Design Contracts

Contract #	Contract Name	Sched Ref*	Issue RFQ	SOQs Submitted	Select BQO/ Advise BFS	Receive SOW	Receive Price Proposal	Finalize Contract	Issue NTP	Bid Ready	Contract Completion	Comments
Final Design Agreements												
FD-240	Farrington Highway Station Final Design *[HDR Engineering, Inc.]*	CF	*Oct 02 '09*	*Nov 19 '09*			*Feb 15 '10*	*Apr 15 '10*	*Jan 14 '11*	*May 15 '13*	*Dec 31 '15*	**NTP 1b: 7/13/2012 - PE Design (A)**
		Act	**Oct 02 '09**	**Nov 19 '09**			**Feb 15 '10**	**Apr 15 '10**	**Jan 14 '11**			**NTP 2: (initial 07/29/2011)(limited work 12/15/2011) - Interim Design (A)**
		B/L	Oct 02 '09	Nov 19 '09			Feb 15 '10	Apr 15 '10	Jan 14 '11	Feb 15 '13	May 30 '15	**NTP 2: (final 02/13/2012) - Interim Design (A)**
		Var	-0-	-0-	-0-	-0-	-0-	-0-	-0-	(89)	(215)	**NTP 3: 01/28/2013 - Final Design (A)**
FD-140	West Oahu Station Group Final Design *[URS Corp.]*	CF	*Jan 14 '10*				*Feb 08 '12*	*May 29 '12*	*Jun 08 '12*	*Sep 11 '13*	*Jun 30 '16*	**NTP 1a: 06/15/2012 - SoM, Workshop, Design Sch (A)**
		Act	**Jan 14 '10**				**Feb 08 '12**	**Jun 14 '12**	**Jun 15 '12**			**NTP 1b: 09/06/2012 - PE Design (A)**
		B/L	Jan 14 '10				Feb 11 '11	May 29 '12	Jun 08 '12	Aug 11 '13	Oct 30 '15	**NTP 2: 01/04/2013 - Interim Design (A)**
		Var	-0-	-0-	-0-	-0-	(362)	(16)	(7)	(31)	(244)	*NTP 3: 06/08/2013 - Final Design (CF)*
FD-340	Kamehameha Highway Station Group Final Design (includes H2/R2 Ramp) *[Anil Verma Assoc, Inc.]*	CF	*Jun 28 '11*	*Aug 04 '11*	*Sep 28 '11*	*Oct 19 '11*	*Mar 02 '12*	*Nov 12 '12*	*Nov 26 '12*	*Dec 20 '13*	*Oct 31 '16*	**NTP 1a: 11/26/2012 - SoM, Workshop, Design Schedule (A)**
		Act	**Jun 28 '11**	**Aug 04 '11**	**Sep 28 '11**	**Aug 20 '12**	**Aug 31 '12**	**Nov 16 '12**	**Nov 26 '12**			*NTP 1b: 02/07/2013 - PE Design (CF)*
		B/L	Jun 28 '11	Aug 04 '11	Sep 28 '11	Oct 19 '11	Feb 28 '12	Jun 08 '12	Jun 22 '12	Nov 15 '13	Aug 29 '15	*NTP 2: 04/29/2013 - Interim Design (CF)*
		Var	-0-	-0-	-0-	(306)	(185)	(161)	(157)	(35)	(429)	*NTP 3: 09/06/2013 - Final Design (CF)*
FD-430	*Utilities*								*Utilities*	*Oct 15 '13*		
	Airport Section Guideway and Utilities Final Design *[AECOM Tech Svcs, Inc.]*	CF	*Jan 26 '11*	*Mar 14 '11*	*Apr 09 '11*	*Jun 09 '11*	*Sep 20 '11*	*Dec 22 '11*	*Jan 05 '12*	Mar 01 '13	*Jun 30 '17*	**NTP 1a: 01/05/2012- SoM, Workshop, Design Schedule (A)**
		Act	**Jan 26 '11**	**Mar 14 '11**	***Apr 09 '11***	***Jun 09 '11***	**Sep 20 '11**	**Dec 22 '11**	**Jan 05 '12**	(228)		**NTP 1b: 02/22/2012 - Updating the PE (A)**
		B/L	Jan 26 '11	Mar 14 '11	*Apr 09 '11*	*Jun 09 '11*	*Sep 20 '11*	Jul 31 '11	Aug 01 '11	*Apr 14 '14*	May 01 '18	**NTP 2: 07/23/2012 - Interim Design (A)**
		Var	-0-	-0-	-0-	-0-	+41,327	(144)	(157)		(305)	*NTP 3: (Util) 08/07/2013 - Final Design (CF)*
	Guideway								*Guideway*	Apr 01 '14 (13)		*NTP 3: (GW) 08/07/2013 - Final Design (CF)*
FD-530	*Utilities*								*Utilities*	*Feb 01 '14*		
	City Center Section Guideway and Utilities Final Design *[AECOM Tech Svcs, Inc.]*	CF	*Dec 16 '11*	*Feb 09 '12*	*Apr 04 '12*	*May 11 '12*	*Jun 05 '12*	*Aug 01 '12*	*Aug 01 '12*	Aug 15 '13	*Apr 30 '18*	**NTP 1a: 07/31/2012- SoM, Workshop, Design Schedule (A)** **NTP 1b: 10/26/2012 - Updating the PE (A)**
		Act	**Dec 16 '11**	**Feb 09 '12**	**Apr 04 '12**	**May 14 '12**	**Jun 05 '12**	***Jul 30 '12***	***Jul 31 '12***	(170)		*NTP 2: (Util) 04/14/2013 - Interim Design (CF)*
		B/L	Dec 16 '11	Feb 09 '12	Apr 04 '12	May 11 '12	Jun 05 '12	Jul 18 '12	Aug 01 '12	*Apr 14 '14*	May 01 '18	*NTP 2: (GW) 04/14/2013 - Interim Design (CF)*
		Var	-0-	-0-	-0-	-0-	-0-	(12)	+1		(1)	*NTP 3: (Util) 09/21/2013 - Final Design (CF)*
	Guideway								*Guideway*	Apr 01 '14 (13)		*NTP 3: (GW) 12/20/2013 - Final Design (CF)*
FD-440	Airport Station Group Final Design *[AECOM Tech Svcs, Inc.]*	CF	*Mar 30 '12*	*May 10 '12*	*Jun 21 '12*	*Jul 10 '12*	*Aug 14 '12*	*Nov 01 '12*	*Nov 02 '12*	*Jan 15 '14*	*Jul 15 '17*	**NTP 1a: 11/14/2012 - SoM, Workshop, Design Schedule (A)**
		Act	**Mar 30 '12**	**May 10 '12**	**Jun 14 '12**	**Jul 10 '12**	**Aug 14 '12**	**Nov 07 '12**	**Nov 14 '12**			**NTP 1b: 01/04/2013 - PE Design (A)**
		B/L	Mar 30 '12	May 10 '12	Jun 21 '12	Jul 21 '12	Aug 23 '12	Oct 12 '12	Oct 26 '12	Apr 01 '14	Jul 29 '17	*NTP 2: 05/03/2013 - Interim Design (CF)*
		Var	-0-	-0-	+7	+11	+9	(26)	(19)	+76	-0-	*NTP 3: 09/30/2013 - Final Design (CF)*
Re-Pkg FD-550	Dillingham and Kaka'ako Station Groups ("East Side Stations") Final Design *[Airport Station Group not included]*	CF	*Nov 15 '12*	*Dec 18 '12*	*Feb 18 '13*	*Mar 06 '13*	*Apr 10 '13*	*Jun 17 '13*	*Jun 28 '13*	*May 01 '15*	*Jul 30 '18*	Combines two (2) station design contracts: FD-540 and FD-545. Includes the eight (8) stations from Kalihi to Ala Moana Center.
		Act	**Nov 16 '12**	**Dec 18 '12**	**Feb 18 '13**	**Mar 06 '13**						
		B/L	Dec 15 '12	Feb 18 '13	Apr 24 '13	May 31 '13	Jun 30 '13	Aug 29 '13	Sep 12 '13	Jun 15 '15	Sep 14 '18	
		Var	+29	+62	+65	+86	+81	+73	+76	+45	+46	
FD-245	Pearl Highlands Parking Structure/ Bus Transit Center Final Design (includes H2/R1 Ramp)	CF	*Apr 15 '13*	*May 30 '13*	*Jul 14 '13*	*Aug 20 '13*	*Sep 19 '13*	*Nov 18 '13*	*Dec 21 '13*	*Oct 01 '15*	*Apr 29 '18*	
		Act										
		B/L	Jun 30 '13	Aug 14 '13	Sep 28 '13	Nov 04 '13	Dec 04 '13	Feb 02 '14	Feb 16 '14	Oct 01 '15	Apr 29 '18	
		Var	+76	+76	+76	+76	+76	+76	+57	-0-	-0-	
FD-600	UH West Oahu Park-and-Ride and Ho`opili Station Finishes Final Design	CF	*Sep 10 '14*	*Dec 08 '14*	*Jan 14 '15*	*Feb 13 '15*	*Apr 14 '15*	*Apr 27 '15*	*May 12 '15*	*Jan 15 '16*	*Sep 28 '18*	
		Act										
		B/L	Sep 10 '14	Dec 08 '14	Jan 14 '15	Feb 13 '15	Apr 14 '15	Apr 27 '15	May 12 '15	Jan 15 '16	Sep 14 '18	
		Var	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	(14)	

[Successful Contractor]

*** Schedule Reference:**

CF = *Current Forecast* ***AIS Delay Impacts incorporated into the Current Forecast.***

ACT = **ACTUAL** **Completed** **Achieved this Month**

B/L = Baseline Master Project Schedule

[Note: B/L reflects the re-baselined Contract Packaging Plan (Revision 3, Mar 30 '12) and the re-baselined Master Project Schedule (Revision 4, Mar 30 '12).]

Variance = Variance of (Baseline Master Project Schedule) Less *(Current Forecast)*

+Ahead/(Behind)/-0- versus the B/L Master Project Schedule

Notes:

All Final Design Consultants are responsible for providing Design Support Services during Bidding and during Construction in accordance with their contracts. Schedule Basis: Contract Completion date reflects final as-built drawing submittals.

Baselined (as *reflected in the Master Project Schedule, Revision 4, March 30, 2012)*

Figure 15. Procurement: Design-Bid-Build (DBB) Contracts

Procurement Tracking Report

Design-Bid-Build (DBB) Contracts

Contract #	Contract Name	Sched Ref*	Bid Ready Dates (Ref.)	Advertise for Bids	Bid Opening	Execute Contract	Issue NTP	Contract Completion	Comments
Design-Bid-Build Contracts									
DBB-505	**Airport Section Utilities Construction**	*CF* **Act** B/L Var	*Oct 15 '13* Mar 01 '13 (228)	*Nov 01 '13* Mar 29 '13 (217)	*Jan 05 '14* May 31 '13 (219)	*Feb 28 '14* Jul 15 '13 (228)	*Mar 05 '14* Aug 01 '13 (216)	*Dec 22 '15* Dec 15 '14 (372)	Airport Utilities Relocation Substantial Completion = *Nov 07 '15*
DBB-510	**City Center Section Utilities Construction**	*CF* **Act** B/L Var	*Feb 01 '14* Aug 15 '13 (170)	*Mar 15 '14* Sep 16 '13 (180)	*May 15 '14* Nov 15 '13 (181)	*Jun 08 '14* Jan 04 '14 (155)	*Jun 15 '14* Jan 18 '14 (148)	*Jun 13 '16* Sep 15 '15 (272)	City Center Utilities Relocation Substantial Completion = *Apr 29 '16*
Re-Pkg DBB-185	**West Oahu/Farrington Hwy/Kamehameha Hwy Station Groups ("West Side Stations") Construction** ***[Airport Station not included]***	*CF* **Act** B/L Var	*Dec 20 '13* Nov 15 '13 (35)	*Jan 15 '14* Dec 16 '13 (30)	*Feb 13 '14* Jan 30 '14 (14)	*Apr 08 '14* Mar 17 '14 (22)	*Apr 15 '14* Mar 31 '14 (15)	*Nov 14 '16* Oct 30 '15 (381)	Substantial Completion = *Sep 30 '16* Combines three (3) station construction contracts: DBB-170, DBB-270 and DBB-370. Includes the nine (9) stations from East Kapolei to Aloha Stadium plus the H2/R2 Ramp.
DBB-470	**Airport Station Group Construction**	*CF* **Act** B/L Var	*Jan 15 '14* Mar 30 '12 (656)	*Oct 01 '14* Dec 16 '13 (289)	*Dec 01 '14* Jan 30 '14 (305)	*Jan 25 '15* Mar 17 '14 (314)	*Feb 01 '15* Mar 31 '14 (307)	*Jun 15 '17* Aug 29 '15 (656)	Substantial Completion = *May 01 '17* Includes the four (4) stations: Pearl Harbor, Airport, Lagoon Drive and Middle Street.
Re-Pkg DBB-580	**Dillingham/Kaka'ako Station Groups ("East Side Stations") Construction**	*CF* **Act** B/L Var	*May 01 '15* Jun 15 '15 +45	*Jul 15 '15* Jan 05 '15 (191)	*Sep 14 '15* Feb 19 '15 (207)	*Nov 08 '15* Apr 05 '15 (217)	*Nov 15 '15* Apr 19 '15 (210)	*Aug 14 '18* Jun 29 '17 (411)	Substantial Completion = *Jun 30 '18* Combines two (2) station construction contracts: DBB-570 and DBB-575. Includes the eight (8) stations from Kalihi to Ala Moana Center.
DBB-520	**Airport and City Center Sections Guideway Construction**	*CF* **Act** B/L Var	*Apr 14 '14* Jan 15 '16 +641	*May 01 '14* May 01 '14 -0-	*Aug 15 '14* Jun 16 '14 (60)	*Oct 09 '14* Jul 31 '14 (70)	*Oct 15 '14* Aug 14 '14 (62)	*Apr 29 '18* Jul 01 '18 +63	Airport GW Subst'l Compl'n = *Jun 30 '17* City Center GW Subst'l Compl'n = *Mar 15 '18*
DBB-275	**Pearl Highlands Parking Structure/ Bus Transit Center Construction** (Includes H2/R1 Ramp)	*CF* **Act** B/L Var	*Oct 01 '15* Oct 01 '15 -0-	*Nov 15 '15* Oct 30 '15 (16)	*Dec 14 '15* Dec 14 '15 -0-	*Jan 28 '16* Jan 28 '16 -0-	*Feb 11 '16* Feb 11 '16 -0-	*Apr 29 '18* Apr 29 '18 -0-	Substantial Completion: *Mar 15 '18*
DBB-600	**UH West Oahu Park-and-Ride and Ho`opili Station Finishes Construction**	*CF* **Act** B/L Var	*Jan 15 '16* Jan 15 '16 -0-	*Mar 15 '16* Feb 15 '16 (29)	*Jun 08 '16* Apr 15 '16 (54)	*Sep 01 '16* May 30 '16 (94)	*Sep 15 '16* Jun 15 '16 (92)	*Aug 14 '18* Aug 15 '18 +1	Substantial Completion: *Jun 30 '18*

[Successful Contractor]

Note: Bid Ready Dates from FD Tracking sheet for Reference.

Note: Contract Completion based on 45 days after Substantial Completion (or, with station groups, the last station in the group).

*** Schedule Reference:**

CF = *Current Forecast* ***AIS Delay Impacts incorporated into the Current Forecast.***

ACT = **ACTUAL** **Completed** **Achieved this Month**

B/L = Baseline Master Project Schedule

[Note: B/L reflects the re-baselined Contract Packaging Plan (Revision 3, Mar 30 '12) and the re-baselined Master Project Schedule (Revision 4, Mar 30 '12).]

Variance = Variance of (Baseline Master Project Schedule) Less *(Current Forecast)*

+Ahead/(Behind)/-0- versus the B/L Master Project Schedule

Baselined (as *reflected in the Master Project Schedule, Revision 4, March 30, 2012)*

Figure 16. Procurement: Construction Engineering and Inspection Services (CE&I) Contracts

Procurement Tracking Report

Construction Engineering and Inspection (CE&I) Services Contracts

Contract #	Contract Name	Sched Ref*	Advertise RFQ	SOQs Submitted	Select BQO/ Advise BFS	Receive SOW	Receive Price Proposal	Finalize Contract	Issue NTP	Constr Advertise for Bids (Ref.)	Contract Completion	Comments
Construction Engineering & Inspection Agreements												
MM-500	**Airport & City Center Section Utilities CE&I Services**	CF	*Dec 13 '12*	*Jan 30 '13*	*Mar 28 '13*	*Jun 04 '13*	*Jul 26 '13*	*Sep 24 '13*	*Oct 01 '13*	*Nov 01 '13*	*Jun 13 '16*	NTP is based on the schedule for the Airport Section Utilities Construction contract (DBB-505). **Addendum No. 1 issued Jan 21 '13.**
		Act	**Dec 21 '12**	**Jan 30 '13**	**Mar 20 '13**							
		B/L	Jul 20 '12	Aug 20 '12	Sep 10 '12	Oct 09 '12	Nov 08 '12	Dec 13 '12	Dec 28 '12	Sep 16 '13	Oct 30 '15	
		Var	(154)	(163)	(199)	(238)	(260)	(285)	(277)	(46)	(227)	
Re-Pkg MM-280	**West Oahu, Farrington Highway and Kamehameha Highway Station Groups ("West Side Stations") CE&I Services** (includes H2/R2 Ramp)	CF	*Jan 22 '13*	*Mar 14 '13*	*May 14 '13*	*Jul 23 '13*	*Sep 17 '13*	*Nov 21 '13*	*Dec 02 '13*	*Jan 15 '14*	*Jun 15 '17*	NTP is based on the schedule for the re-packaged "West Side Stations" Construction contract (DBB-185).
		Act	**Jan 23 '13**	**Mar 14 '13**								
		B/L	Feb 13 '13	Mar 15 '13	Apr 16 '13	May 16 '13	Feb 22 '13	Aug 16 '13	Sep 16 '13	Dec 16 '13	Aug 29 '15	
		Var	+21	+1	(28)	(68)	(207)	(97)	(77)	(30)	(656)	
MM-525	**Airport and City Center Sections Guideway CE&I Services**	CF	*Jul 05 '13*	*Aug 19 '13*	*Oct 02 '13*	*Nov 01 '13*	*Dec 02 '13*	*Jan 31 '14*	*Apr 01 '14*	*May 01 '14*	*Jun 13 '18*	
		Act					**Oct 09 '00**					
		B/L	Jul 19 '13	Sep 02 '13	Oct 16 '13	Nov 15 '13	Dec 16 '13	Feb 14 '14	Mar 17 '14	May 01 '14	Aug 15 '18	
		Var	+14	+14	+14	+14	+14	+14	(15)	-0-	+63	
Re-Pkg MM-590	**Airport, Dillingham and Kaka`ako Station Groups ("East Side Stations") CE&I Services**	CF	*Feb 05 '14*	*Mar 08 '14*	*Apr 05 '14*	*May 04 '14*	*Jun 03 '14*	*Aug 02 '14*	*Sep 01 '14*	*Oct 01 '14*	*Aug 14 '18*	NTP is based on the schedule for the Airport Station Group Construction contract (DBB-470).
		Act										
		B/L	May 23 '14	Jun 23 '14	Jul 21 '14	Aug 19 '14	Sep 18 '14	Nov 17 '14	Dec 17 '14	Jan 05 '15	Jul 30 '18	
		Var	+107	+107	+107	+107	+107	+107	+107	+96	(15)	
MM-385	**Pearl Highlands Parking Structure/ Bus Transit Center CE&I Services** (includes H2/R1 Ramp)	CF	*Mar 20 '15*	*Apr 17 '15*	*May 18 '15*	*Jun 16 '15*	*Jul 17 '15*	*Sep 15 '15*	*Oct 16 '15*	*Nov 15 '15*	*Apr 29 '18*	
		Act										
		B/L	Jan 05 '15	Feb 02 '15	Mar 05 '15	Apr 03 '15	May 04 '15	Jul 03 '15	Aug 03 '15	Oct 30 '15	Apr 29 '18	
		Var	(74)	(74)	(74)	(74)	(74)	(74)	(74)	(16)	-0-	
MM-600	**UH West Oahu Park-and-Ride and Ho`opili Station Finishes CE&I Services**	CF	*Aug 01 '15*	*Aug 31 '15*	*Oct 01 '15*	*Oct 31 '15*	*Nov 30 '15*	*Jan 15 '16*	*Feb 14 '16*	*Mar 15 '16*	*Sep 29 '18*	
		Act										
		B/L	Oct 21 '15	Nov 20 '15	Dec 21 '15	Jan 20 '16	Feb 19 '16	Apr 05 '16	May 05 '16	Feb 15 '16	Aug 15 '18	
		Var	+81	+81	+81	+81	+81	+81	+81	(29)	(45)	

[Successful Contractor]

Note: Constr Adv for Bids for Reference.

Schedule Basis: NTP to CE&I Contracts one (1) month prior to Advertise for Construction Bids; Contract completion is three (3) months after Substantial Completion for contract closeout.

* Schedule Reference:

CF = *Current Forecast* ***AIS Delay Impacts incorporated into the Current Forecast.***

ACT = **ACTUAL** **Completed** **Achieved this Month**

B/L = Baseline Master Project Schedule

[Note: B/L reflects the re-baselined Contract Packaging Plan (Revision 3, Mar 30 '12) and the re-baselined Master Project Schedule (Revision 4, Mar 30 '12).]

Variance = Variance of (Baseline Master Project Schedule) Less *(Current Forecast)*

+Ahead/(Behind)/-0- versus the B/L Master Project Schedule

Baselined (as *reflected in the Master Project Schedule, Revision 4, March 30, 2012)*

Figure 17. Procurement: Project Management and Specialty Consultant Services Contracts

Procurement Tracking Report

Project Management and Specialty Consultant Services Contracts

CPP Contract #	Contract Name	Sched Ref*	Issue RFQ	SOQs Submitted	Select BQO/ Advise BFS	Receive SOW	Receive Price Proposal	Finalize Contract	Issue NTP	Contract Completion	Comments
MM-900	**Program Management Support Consultant - 1** ***(PMSC-1)*** ***[InfraConsult LLC]***	*CF*	*Jul 15 '09*	*Sep 01 '09*					*Nov 19 '09*	*Feb 28 '13*	
		Act	**Jul 15 '09**	**Sep 01 '09**					**Nov 19 '09**	**Feb 28 '12**	
		B/L	Jul 15 '09	Sep 01 '09					Nov 19 '09	Feb 28 '12	
		Var	-0-	-0-		-0-	-0-	-0-	-0-	(366)	
MM-901	***Program Management Support Consultant - 2*** ***(PMSC-2)*** ***[InfraConsult LLC]***	*CF*	*Aug 03 '11*	*Sep 02 '09*				*Feb 28 '12*	*Mar 08 '12*	*Feb 28 '15*	
		Act	**Aug 03 '11**	**Sep 02 '09**				**Feb 28 '12**	**Mar 08 '12**		
		B/L	Aug 03 '11	Sep 02 '09				Feb 23 '12	Feb 23 '12	Feb 28 '15	
		Var	-0-	-0-	-0-	-0-	-0-	(5)	(14)	-0-	
MM-905	**General Engineering Consultant I (GEC-1)** **(EIS/Preliminary Engrg)** ***[Parsons Brinckerhoff]***	*CF*	*Jun 01 '07*	*Aug 24 '07*					*Oct 25 '09*	*Feb 28 '13*	
		Act	**Jun 01 '07**	**Aug 24 '07**					**Oct 25 '09**	**Feb 28 '12**	
		B/L	Jun 01 '07	Aug 24 '07					Oct 25 '09	Mar 25 '12	
		Var	-0-	-0-	-0-	-0-	-0-	-0-	-0-	(340)	
MM-910	**General Engineering Consultant II (GEC-2)** **(Final Design and Construction)** ***[Parsons Brinckerhoff, Inc.]***	*CF*	*Sep 03 '09*	*Nov 15 '09*				*Jun 30 '11*	*Aug 02 '11*	*Aug 01 '14*	
		Act	**Sep 03 '09**	**Nov 15 '09**				**Jun 30 '11**	**Aug 02 '11**		
		B/L	Sep 03 '09	Nov 15 '09				Jun 30 '11	Aug 02 '11	Aug 01 '14	
		Var	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	
MM-935	**Real Estate Consultant** ***[Paragon Partners, Ltd.]***	*CF*	*Apr 01 '11*				*Sep 08 '11*	*Mar 14 '12*	*Mar 14 '12*	*Mar 13 '17*	
		Act	**Apr 01 '11**				**Sep 08 '11**	**Mar 14 '12**	**Mar 14 '12**		
		B/L	Apr 01 '11				Sep 08 '11	Mar 15 '12	Mar 15 '12	Mar 13 '17	
		Var	-0-				-0-	+1	+1	-0-	
MM-940	**Kako'o Consultant** ***[Pacific Legacy, Inc.]***	*CF*	*May 20 '11*	*Jun 20 '11*			*Sep 09 '11*	*Mar 29 '12*	*Mar 29 '12*	*Feb 14 '17*	
		Act	**May 20 '11**	**Jun 20 '11**			**Sep 09 '11**	**Mar 29 '12**	**Mar 30 '12**		
		B/L	May 20 '11				Sep 09 '11	Mar 15 '12	Mar 15 '12	Feb 14 '17	
		Var	-0-	-0-	-0-	-0-	-0-	(14)	(14)	-0-	
MM-950	**Owner Controlled Insurance Program (OCIP)** **Consultant** ***[Marsh USA, Inc.]***	*CF*	*Jan 31 '12*				*Mar 01 '12*	*May 10 '12*	*May 10 '12*	*May 09 '17*	5-year Consultant Services contract to assist in procurement of insurance coverage and administer insurance and risk management services for the HRTP.
		Act	**Jan 31 '12**				**Mar 01 '12**	**May 10 '12**	**Jun 05 '12**		
		B/L	Jan 31 '12				Mar 01 '12	May 18 '12	Apr 28 '12	Dec 01 '19	
		Var	-0-	-0-	-0-	-0-	-0-	+8	(38)	----	
MM-975	**LEED Commissioning Services for the Maintenance and Storage Facility (MSF)** ***[Enovity, Inc.]***	*CF*						*Oct 06 '10*	*Oct 07 '10*	*Jan 14 '16*	
		Act						**Oct 06 '10**	**Oct 07 '10**		
		B/L						Oct 07 '10	Oct 07 '10	Jan 14 '16	
		Var						+1	-0-	-0-	

[Successful Contractor]

* Schedule Reference:

CF = *Current Forecast*

ACT = **ACTUAL** **Completed** **Achieved this Month**

B/L = Baseline Master Project Schedule

[Note: B/L reflects the re-baselined Contract Packaging Plan (Revision 3, Mar 30 '12) and the re-baselined Master Project Schedule (Revision 4, Mar 30 '12).]

Variance = Variance of (Baseline Master Project Schedule) Less *(Current Forecast)*

+Ahead/(Behind)/-0- versus the B/L Master Project Schedule

Baselined (as *reflected in the Master Project Schedule, Revision 4, March 30, 2012)*

Figure 18. Procurement: HDOT Consultant Services and Other Contracts

Procurement Tracking Report

Hawaii Department of Transportation (HDOT) Consultant Services Contracts and Other Contracts

CPP Contract #	Contract Name	Sched Ref*	Issue RFQ	SOQs Submitted	Select BQO/ Advise BFS	Receive SOW	Receive Price Proposal	Finalize Contract	Issue NTP	Contract Completion	Comments
HDOT Agreements											
MM-915	**HDOT Traffic Management Coordination Consultant** ***[ICX Transportation Group]***	*CF*	*Aug 15 '11*					*Jun 01 '12*	*Jul 01 '12*	*Jul 01 '17*	Scope of services is for the entire alignment. Contract length = 60 months.
		Act	**Aug 15 '11**					**Jun 05 '12**	**Jun 12 '12**		
		B/L	Mar 04 '11					Jun 01 '12	Jul 01 '12	Feb 15 '19	
		Var	(164)	-0-	-0-	-0-	-0-	(4)	+19	+594	
MM-920	**HDOT Design Coordination Consultant - West Oahu/Farrington Highway Guideway Section** ***[AECOM Tech Svcs, Inc.]***	*CF*						*Jun 07 '11*	*Jun 08 '11*	*Jun 15 '18*	
		Act						**Jun 07 '11**	**Jun 08 '11**		
		B/L						Jun 07 '11	Jun 08 '11	Jun 15 '18	
		Var						-0-	-0-	-0-	
MM-921	**HDOT Design Coordination Consultant - Kamehameha Highway Guideway Section** ***[AECOM Tech Svcs, Inc.]***	*CF*						*Jun 01 '12*	*Jul 01 '12*	*Jul 15 '15*	
		Act						**Jun 05 '12**	**Jun 29 '12**		
		B/L						Apr 01 '12	*Jul 01 '12*	Jul 15 '15	
		Var						(61)	(2)	-0-	
MM-922	**HDOT Design Coordination Consultant - Airport and City Center Guideway Sections** ***[SSFM International]***	*CF*						*Jan 16 '14*	*Jan 30 '14*	*Jun 15 '18*	The scope of services for City Center, previously packaged as a separate contract (MM-923), is now included as part of this contract, the option executed on Nov 01 '12. MM-923 has been deleted.
		Act						**Jun 08 '12**	**Jun 12 '12**		
		B/L						Jan 16 '14	Jan 30 '14	Jun 15 '18	
		Var						+587	+597	-0-	
Other Agreements											
MM-945	**On-Call Construction Contractor(s)**	*CF*	*Apr 01 '13*	*May 01 '13*	*May 16 '13*	*Jun 15 '13*	*Jul 15 '13*	*Aug 14 '13*	*Sep 13 '13*	*Mar 03 '19*	
		Act									
		B/L	Mar 15 '13	Apr 14 '13	Apr 29 '13	May 29 '13	Jun 28 '13	Jul 28 '13	Aug 27 '13	Mar 03 '19	
		Var	(17)	(17)	(17)	(17)	(17)	(17)	(17)	-0-	
MM-946	**On-Call HazMat Contractor** ***[CH2M Hill + HazMat Contractor]***	*CF*						*Jun 15 '12*	*Sep 07 '12*	*Feb 15 '17*	
		Act						**Aug 23 '12**	**Sep 07 '12**		
		B/L						Jun 15 '12	Jun 30 '12	Feb 15 '17	
		Var						-0-	(69)	-0-	

[Successful Contractor]

*** Schedule Reference:**

CF = *Current Forecast*
ACT = **ACTUAL** **Completed** **Achieved this Month**
B/L = Baseline Master Project Schedule
[Note: B/L reflects the re-baselined Contract Packaging Plan (Revision 3, Mar 30 '12) and the re-baselined Master Project Schedule (Revision 4, Mar 30 '12).]
Variance = Variance of (Baseline Master Project Schedule) Less *(Current Forecast)*
+Ahead/(Behind)/-0- versus the B/L Master Project Schedule

Baselined (as *reflected in the Master Project Schedule, Revision 4, March 30, 2012)*

3.2 Design-Build (DB) Contract Status

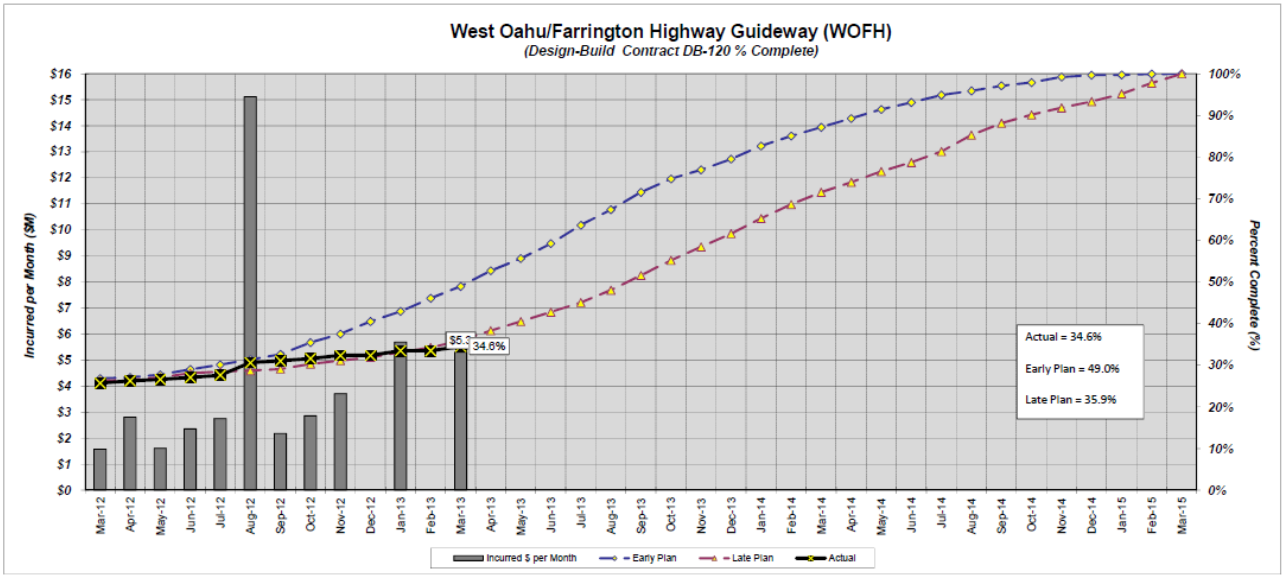
Contract DB-120: West Oahu/Farrington Highway Guideway (WOFH)				
DB Contractor: Kiewit Infrastructure West Company (KIWC)				
Committed:[1]	$537,771,469		Incurred to date:	$173,466,598
Authorized:[2]	$316,005,535	(58.8%)	Substantial Completion:	February 2016

[1] Commitment as of 3/29 = Contract value (not including contingency) + executed Change Orders.
[2] Total Authorized for Expenditure (AFE) as of 3/29= NTP dollar values + executed Change Orders.

- **Contract Progress**

Actual progress as of March 29 is 34.6%, versus the early plan of 49% and the late plan of 35.9%, as shown in Figure 19 below. $5.3M was incurred in March. Design is 96% complete, based on Schedule of Milestones completion, and continues through the partial suspension of construction. A revised baseline schedule is being processed based on an assumed restart of construction in September 2013.

Figure19. West Oahu/Farrington Highway Guideway (WOFH) Construction



- **Activities this month**
  - HART continues to work with KIWC to mitigate the impact of the partial suspension of construction activities.
  - HART continued efforts to resolve contract changes and contractor claims.
  - KIWC continues to maintain and secure the project site including laydown yards during the construction suspension. In addition, KIWC continued maintenance activities along Farrington Highway as part of the Joint Use and Occupancy agreement with HDOT.
  - KIWC continued soil resistivity testing.
  - A total of 407 contract submittals have been received (5 currently under review).
  - KIWC has completed 60 (47%) of 129 final design submittals.
  - HART has received 226 Requests for Information (RFIs) from the contractor (all closed).

- **Look Ahead**
  - Continue working with KIWC to mitigate impacts of the partial suspension of construction activities.
  - Geotechnical testing at the Lee Property.
  - Site assessment and preparation of demolition plan at the 'Banana Patch' properties.

- Continue interface and final design activities.
- Resolution of contract changes.

Contract DB-200: Maintenance and Storage Facility (MSF)

DB Contractor: Kiewit/Kobayashi Joint Venture (KKJV)

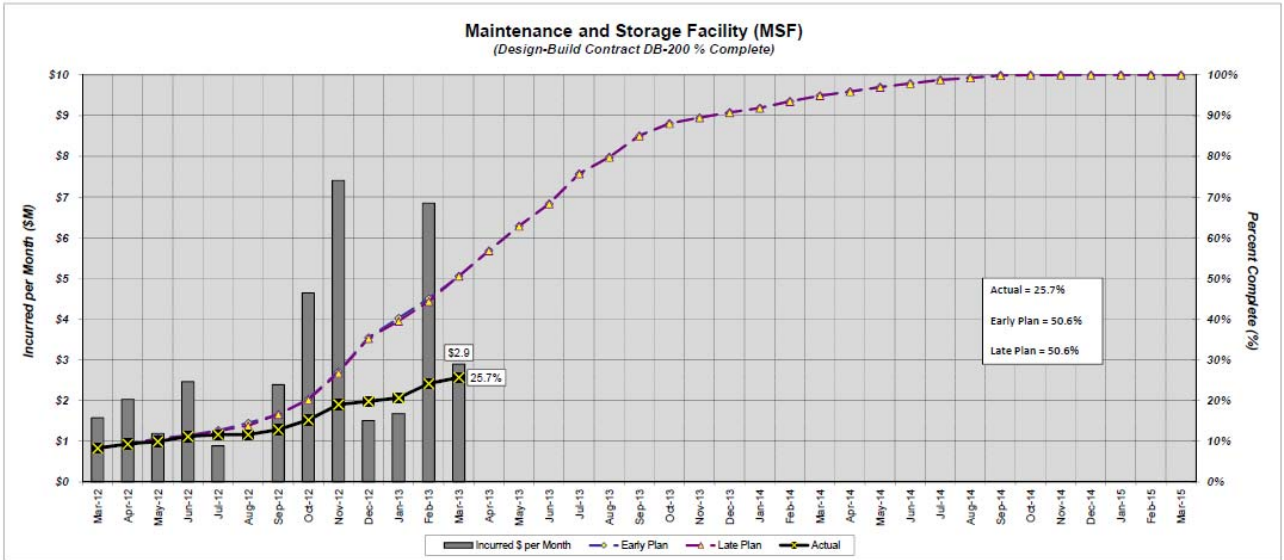
Committed:[1]	$215,375,751		Incurred to date:	$50,125,174
Authorized:[2]	$148,406,485	(68.9%)	Substantial Completion:	November 2015

[1] Commitment as of 3/29 = Contract value (not including contingency) + executed Change Orders.
[2] Total Authorized for Expenditure (AFE) as of 3/29= NTP dollar values + executed Change Orders.

- Contract Progress

Actual progress as of March 29 is 25.7%, versus the early plan of 50.6% and the late plan of 50.6%, as shown in Figure 20 below. In March, $2.9M was incurred. Design is 98% complete, based on Schedule of Milestones completion, and is continuing through the partial suspension of construction. A revised baseline schedule is being processed based on an assumed restart of construction in September 2013.

Figure 20. Maintenance and Storage Facility (MSF) Construction



- **Activities this month**
  - HART continues to work with KKJV to mitigate impacts of the partial suspension of construction activities.
  - KKJV continued to maintain and secure the project site during the construction suspension.
  - HART continued efforts to resolve contract changes and contractor claims.
  - KKJV continued working with the Core Systems Contractor to resolve interface issues.
  - A total of 109 total contract submittals have been received (1 under review).
  - KKJV has completed 5 (56%) of 9 final design submittals.
  - HART has received 134 Requests for Information (RFIs) from the contractor (2 open).

- **Look Ahead**
  - Continue working with KKJV to mitigate impacts of the partial suspension of construction activities.
  - Resolve Core Systems interface items.
  - Oversight of contractor material procurement.
  - Continue efforts to resolve contract changes and contractor claims.

Contract DB-320: Kamehameha Highway Guideway (KHG)

DB Contractor: Kiewit Infrastructure West Company (KIWC)

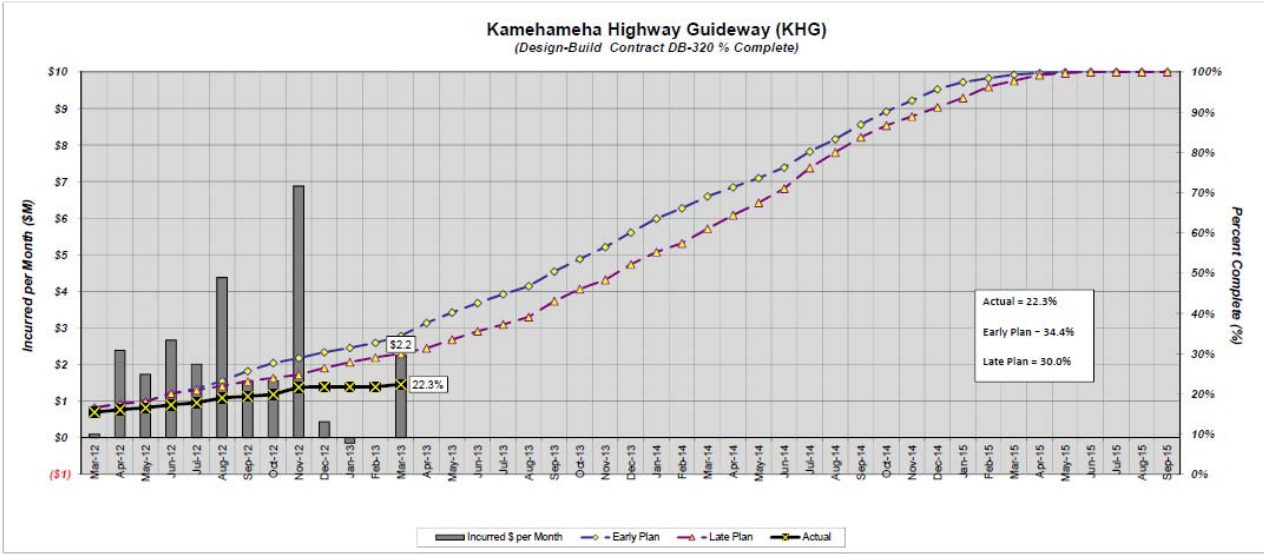
Committed:[1]	$376,366,000		Incurred to date:	$83,068,340
Authorized:[2]	$166,382,062	(44.2%)	Substantial Completion:	June 2016

[1] Commitment as of 3/29 = Contract value (not including contingency) + executed Change Orders.
[2] Total Authorized for Expenditure (AFE) as of 3/29 = NTP dollar values + executed Change Orders.

- **Contract Progress**

Actual progress as of March 29 is 22.3%, versus an early plan of 34.4% and a late plan of 30%, as shown in Figure 21 below. In March, $2.2M was adjusted. Design is 94% complete, based on Schedule of Milestones completion, and is continuing through the partial suspension of construction. A revised baseline schedule is being processed based on an assumed restart of construction in September 2013.

Figure 21. Kamehameha Highway Guideway (KHG) Construction



- **Activities this month**
  - HART continued working with KIWC to mitigate impacts of the partial suspension of construction activities.
  - KIWC continues to maintain and secure the project site including laydown yards during the construction suspension.
  - KIWC continued soil resistivity testing.
  - HART continued efforts to resolve contract changes and contractor claims.
  - A total of 164 contract submittals have been received (12 under review).
  - KIWC has completed 8 (21%) of 39 final design submittals.
  - HART has received 81 Requests for Information (RFIs) from the contractor (1 open).

- **Look Ahead**
  - Continue working with KIWC to mitigate impacts of the partial suspension of construction activities.
  - Geotechnical testing to support design completion.
  - Continue interface and design activities.
  - Continue efforts to resolve contract changes and contractor claims.

3.3 Design-Build-Operate-Maintain (DBOM) Contract Status

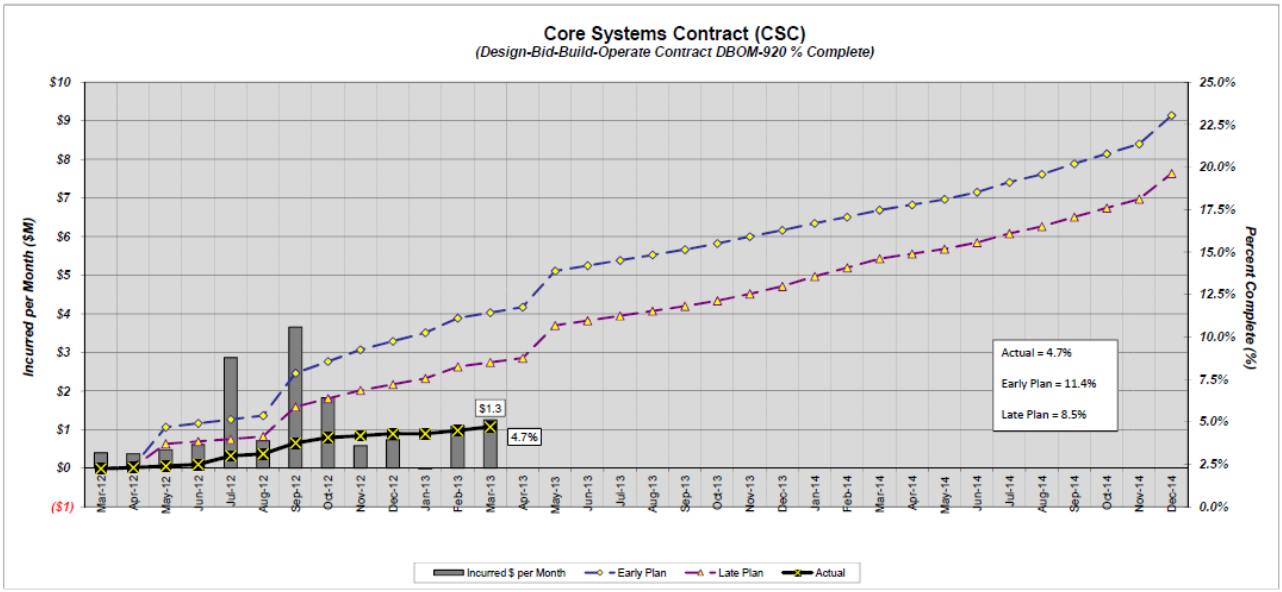
Contract DBOM-920: Core Systems Contract (CSC) DBOM Contractor: Ansaldo Honolulu Joint Venture (AHJV)				
Committed:[1]	$573,839,000		Incurred to date:	$27,064,130
Authorized:[2]	$ 97,975,035	(17.1%)	Start-up Completion:	March 2019

[1] Commitment as of 3/29 = Contract value (excluding contingency and $823.6 M O&M budget) + executed Change Orders.
[2] Total Authorized for Expenditure (AFE) as of 3/29= NTP dollar values + executed Change Orders.

- **Contract Progress**

Actual progress as of March 29 is 4.7%, versus the early plan of 11.4% and the late plan of 8.5%, as shown in Figure 22 below. In March, $1.3M was incurred. Design is 20% complete. A revised schedule is being processed based on an assumed restart of construction for fixed facility contractors in September 2013.

Figure 22. Core Systems Contract (CSC)



- **Activities this month**
  - AHJV continues to participate in Interface meetings and to issue/respond to Requests for Interface Data (RFIDs) and to coordinate fixed-facility contractor interfaces.
  - HART reviewed AHJV design submittals for all systems and is conducting follow up meetings to resolve comments.
  - HART is coordinating with AHJV to finalize selection and cost for adding station platform screen gates.

- **Look Ahead**
  - Resolve interface issues with fixed facility contractors, particularly MSF and FHSG design.
  - HART to finalize evaluation of AHJV proposal for Platform Screen Gates.

3.4 Final Design (FD) Contract Status

3.4.1 Station DBB Contracts Status (Executed and In Negotiation)

Contract FD-140: West Oahu Station Group Construction (WOSG) Final Design

Contractor: URS, Final Design Consultant (Engineer of Record)

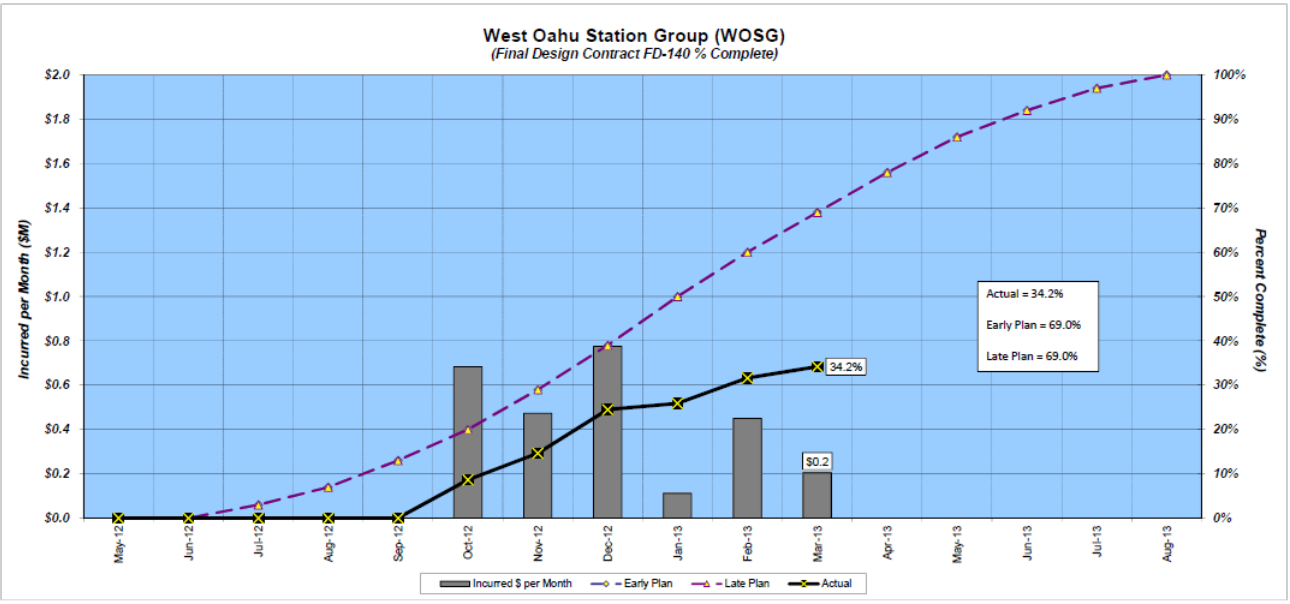
Committed:[1]	$7,789,000		Incurred to date:	$2,696,127
Authorized:[2]	$4,594,398	(59.0%)	Construction Docs Bid-Ready:	September 2013

[1] Total Commitment as of 3/29 = Contract value (not including contingency) with Design Allowance + executed Change Orders.
[2] Total Authorized for Expenditure (AFE) as of 3/29= NTP dollar values + executed Change Orders.

- **Contract Progress**

Actual progress as of March 29 is 34.2%, versus the early and late plans of 69.0%, as shown in Figure 23 below. In March, $0.2M was incurred. Design is 35% complete.

Figure 23. West Oahu Station Group (WOSG) Final Design



- **Activities this month**
  - Continued interim design development.
  - URS is working on resolving interface issues with guideway and core systems contractors.
  - Continued to hold weekly progress and interface meetings.
- **Look Ahead**
  - Resolution on Hoʻopili Station scope.

Contract FD-240: Farrington Highway Station Group (FHSG) Final Design

Contractor: HDR Engineering, Inc., Final Design Consultant (Engineer of Record)

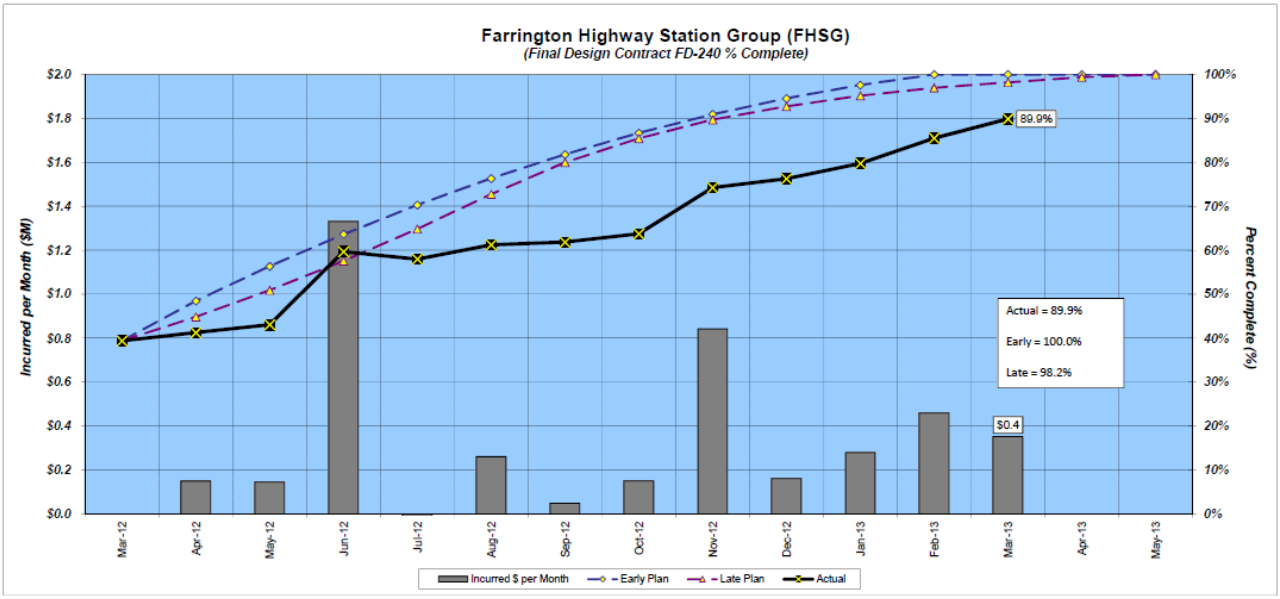
Committed:[1]	$8,008,045		Incurred to date:	$6,752,075
Authorized:[2]	$7,711,060	(96.3%)	Construction Documents Bid-Ready:	May 2013

[1] Commitment as of 3/29 = Contract value (not including contingency) with Design Allowance + executed Change Orders.
[2] Total Authorized for Expenditure (AFE) as of 3/29= NTP dollar values + executed Change Orders.

- **Contract Progress**

Actual progress as of March 29 is 89.9%, versus the early plan of 100% and the late plan of 98.2%, as shown in Figure 24 below. In March, $0.4M was incurred. Design is 95% complete.

Figure 24. Farrington Highway Station Group (FHSG) Final Design



- **Activities this month**
  - Reviewing final design submittal and cost estimate.
  - Continued to hold weekly progress and interface meetings.
  - HDR is working on resolving interface issues with guideway and core systems contractors.

- **Look Ahead**
  - Complete final design submittal review and close out contract.

Contract FD-340: Kamehameha Highway Station Group (KHSG) Final Design

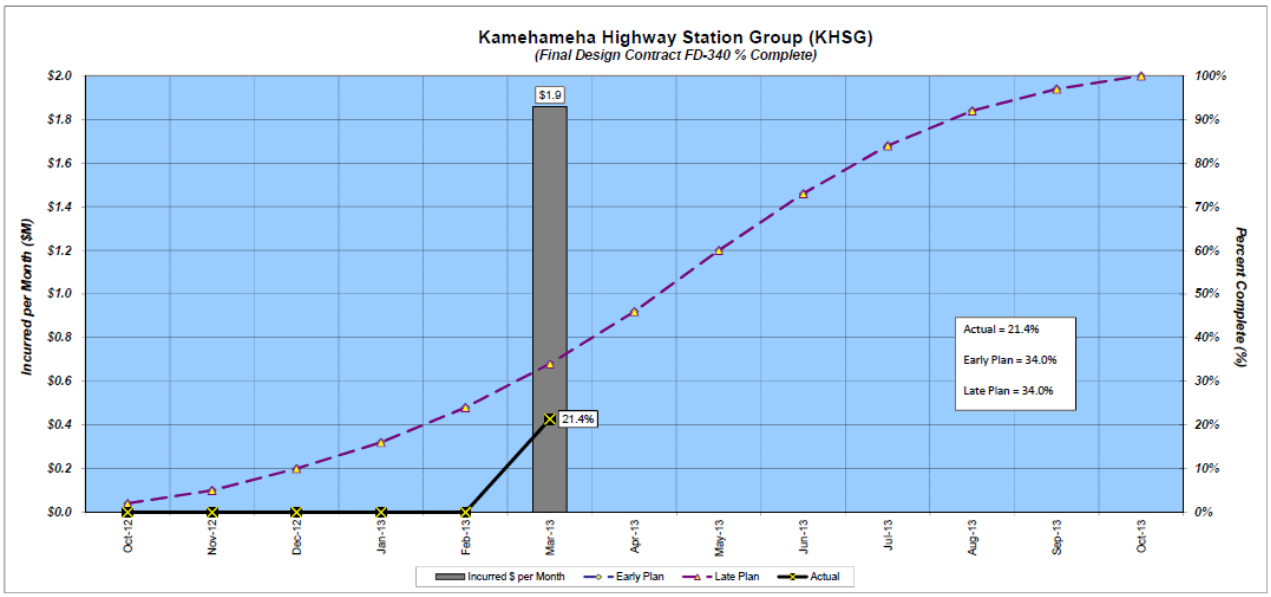
Contractor: Anil Verma Associates, Inc., Final Design Consultant (Engineer of Record)

Committed:[1]	$8,702,592		Incurred to date: $1,859,113
Authorized:[2]	$3,024,525	(34.8%)	Construction Documents Bid-Ready: December 2013

[1] Commitment as of 3/29 = Contract value (not including contingency) with Design Allowance + executed Change Orders.
[2] Total Authorized for Expenditure (AFE) as of 3/29= NTP dollar values + executed Change Orders.

Actual progress as of March 29 is 21.4%, versus the early and late plan of 34%, as shown in Figure 25 below. In March, $1.9M was incurred. Design is 25% complete.

Figure 25. Kamehameha Highway Station Group (KHSG) Final Design



- **Activities this month**
  - HART approved schedule of milestone and baseline schedule.
  - Continued to hold weekly progress and interface meetings.
- **Look Ahead**
  - Continue to develop Preliminary Engineering update.
  - AVA to submit Right-of-Entry (ROE) for site survey.

Contract FD-430 Airport Section Guideway and Utilities Final Design

Contractor: AECOM Technical Services, Inc., Final Design Consultant (Engineer of Record)

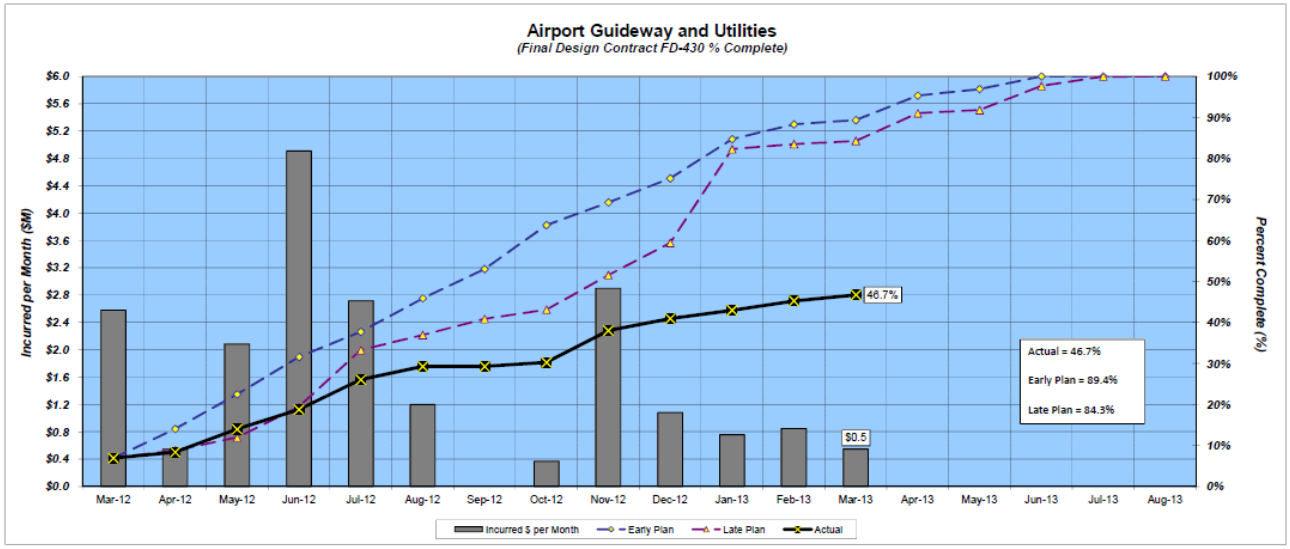
Committed:[1]	$39,115,960			Incurred to date:	$17,404,742
Authorized:[2]	$31,341,791	(80.1%)	Construction Documents Bid-Ready: Utilities Guideway		October 2013 April 2014

[1] Commitment as of 3/29 = Contract value (not including contingency) with Design Allowance + executed Change Orders.
[2] Total Authorized for Expenditure (AFE) as of 3/29= NTP dollar values + executed Change Orders.

- **Contract Progress**

Actual progress as of March 29 was 46.7%, versus the early plan of 89.4% and the late plan of 84.3%, as shown in Figure 26 below. In March, $.5M was incurred. Design is 50% complete.

Figure 26. Airport Guideway and Utilities Final Design



- **Activities this month**
  - HART and AECOM continued coordination with HDOT (Highway and Airport) and utility companies, and other stakeholders.
  - Continued weekly progress/design and interface meetings.
  - AECOM continued interim design development.
  - AECOM continued geotechnical testing.
  - HART held meetings with HDOT to resolve alignment and column locations along Uelena Street.

- **Look Ahead**
  - Continue working on interim design packages.
  - Resolution of alignment and column locations through Uelena Street.
  - Continue geotechnical testing.

Contract FD-440: Airport Station Group (ASG) Final Design

Contractor: AECOM Technical Services, Inc., Final Design Consultant (Engineer of Record)

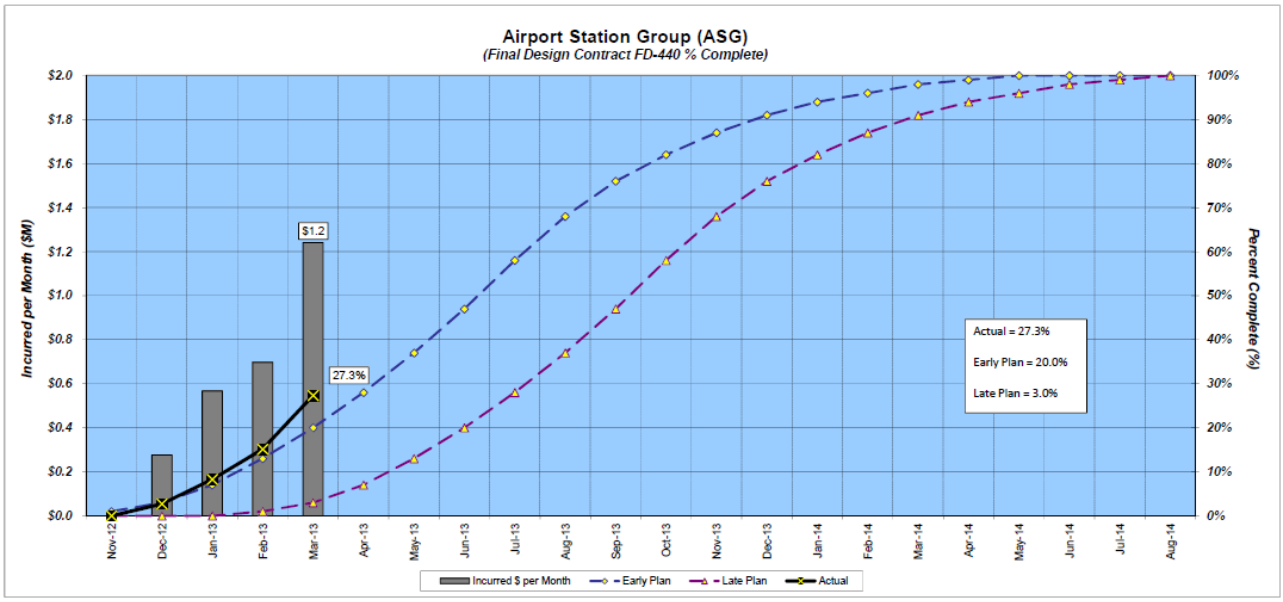
Committed:[1]	$10,177,365		Incurred to date:	$2,780,334
Authorized:[2]	$2,878,543	(28.3%)	Construction Documents Bid-Ready:	January 2014

[1] Commitment as of 3/29 = Contract value (not including contingency) with Design Allowance + executed Change Orders.
[2] Total Authorized for Expenditure (AFE) as of 3/29= NTP dollar values + executed Change Orders.

- **Contract Progress**

Actual progress as of March 29 is 27.3%, versus the early plan of 20% and the late plan of 3.0%, as shown in Figure 27 below. In March, $1.2M was incurred. Design is 20% complete.

Figure 27. Airport Station Group (ASG) Final Design



- **Activities this month**
  - Continued to hold weekly progress and interface meetings.
  - A meeting was held with the Navy to discuss the Pearl Harbor Station and access to the Navy base.

- **Look Ahead**
  - Continue working on the preliminary engineering development.

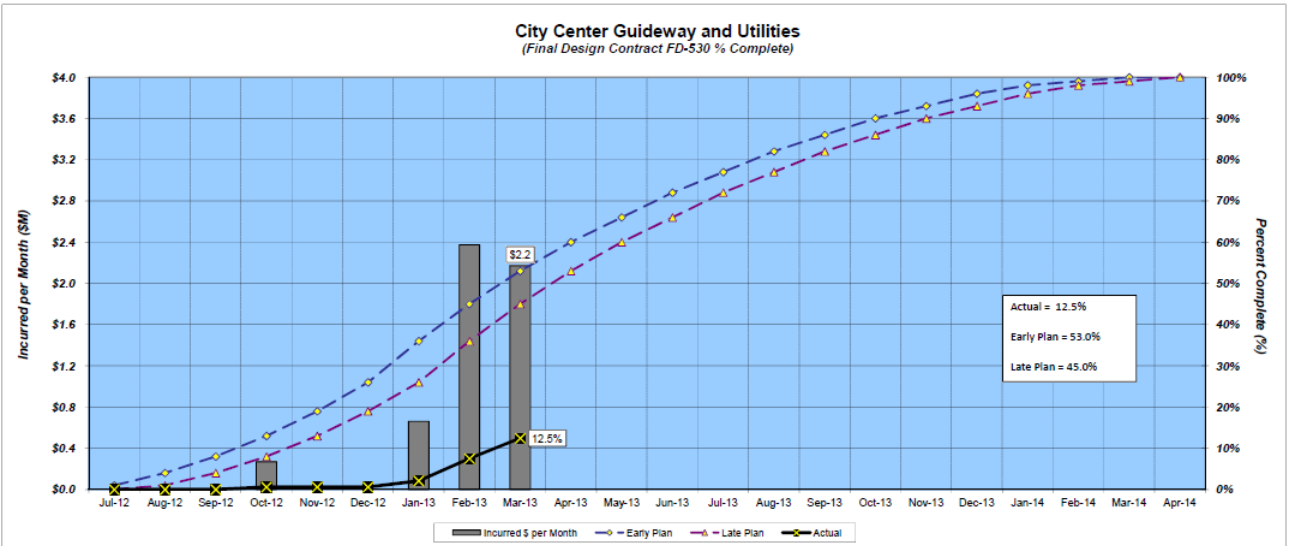
Contract FD-530: City Center Section Guideway and Utilities Final Design Contractor: AECOM Technical Services, Inc., Final Design Consultant (Engineer of Record)				
Committed:[1]	$43,948,220		Incurred:	$5,474,095
Authorized:[2]	$15,949,421	(36.3%)	Construction Documents Bid-Ready:	
			Utilities	August 2013
			Guideway	April 2014

[1] Commitment as of 3/29 = Contract value (not including contingency) with Design Allowance + executed Change Orders.
[2] Total Authorized for Expenditure (AFE) as of 3/29= NTP dollar values + executed Change Orders.

- **Contract Status**

Actual progress as of March 29 is 12.5%, versus the early plan of 53% and the late plan of 45%, as shown in Figure 28 below. This contract is to be combined into the Airport and City Center Guideway Construction contract (DBB-520). Design is 20% complete.

Figure 28. City Center Guideway and Utilities Final Design



- **Activities**
  - Continued weekly progress/design and interface meetings.
  - AECOM continued Preliminary Engineering Design development.
  - HART and AECOM continued to meet with various private and public stakeholders to coordinate station and guideway interface with their planned developments.

- **Look Ahead**
  - Continue Preliminary Engineering Design development.
  - Commence geotechnical testing.

3.5 Utility Agreements

- **Activities this month**
  - Buy America:
    - HART received commitment letters stating that Sandwich Isle Communications (SIC), Hawaiian Telcom (HT), and Hawaii Gas Company (HGC), formerly The Gas Company, will comply with Buy America requirements.

        - Chevron has reviewed the entire HRTP alignment and has indicated that no construction agreement between HART will be necessary. HART understanding that any relocation of Chevron facilities will be performed by other HART contractors, and Buy America requirements would then be applicable to those contractors.
        - AT&T Corporate and AT&T Government Solutions (AT&T Gov.) have indicated that they would be able to comply with Buy America requirements.
        - HART has requested that Oceanic Time Warner Cable (OTWC) investigate the origin of their materials and report their findings to us by May 31, 2013.
        - Tesoro has indicated that it would be Buy America compliant with the pipeline, and valves, however would need a waiver for some of their electronic data collection parts which cannot be Buy America compliant, due to a system wide incompatibility with their control room.
        - Hawaiian Telcom purchased Wavecom on December 31, 2012, and is in the process of determining the origin of the material on hand that Wavecom had purchased for the HRTP project.
        - HECO should finish their investigation of origin of materials and furnish their findings to HART by the end of April.
    - WOFH section:
        - Draft Amendments for the Utility Construction Agreements (UCAs) executed with: Hawaiian Electric Company (HECO), Oceanic Time Warner Cable (OTWC) and Wavecom Solutions including Buy America requirements are under procurement review.
        - The Hawaiian Telcom (HT) UCA has not yet been executed. HT provided comments to the current agreement to HART. HART has transmitted the contract to HT for execution.
        - Sandwich Isle Communications (SIC) UCA has not been executed. There are no current conflicts in the WOFH section, however SIC has requested an agreement in the event a conflict arises. Draft UCA is under procurement review.
    - KHG section:
        - All Engineering Service Agreements (ESAs) required for KHG have been executed with: AT&T Corporate, Chevron, HT, OTWC, SIC, Wavecom, Tesoro, HGC and tw telecom.
        - The draft UCA**,** incorporating Buy America requirements, was transmitted to Tesoro for review.
        - Draft UCAs for OTWC, SIC, and HT are under procurement review.
        - There has been confirmation that no UCA's for Chevron, and AT&T Corporate will be needed.
    - Airport and City Center sections:
        - All ESAs for the Airport and City Center sections have been transmitted to the utility owners for review and comment.
        - Draft ESA for AT&T Gov Solutions will be sent to Utility.
        - tw telecom ESA, and OTWC for the Airport and City Center Section have been executed.
        - Airport Bridging Agreement with HECO was executed and NTP issued on 2/19/2013; an amendment extending the agreement time is being processed.
        - City Center Bridging Agreement with HECO was executed and NTP issued on 3/4/13; an amendment extending the agreement time is being processed.
        - Discussion with HECO on Airport and City Center UFRCRA on-going.
        - There has been confirmation that no UCA's for Chevron, and Tesoro will be needed for the Airport and City Center segments.

- **Look Ahead**
    - Transmit the remaining draft UCAs to utility owners in the KHG section. HART is now ready to proceed after some initial delays in completing drafts due to the addition of Buy America requirements for utility construction agreements.

- Hawaiian Telcom purchased Wavecom Solutions on December 31, 2012, and will be assuming the ESA and UCA for the WOFH segment, and the ESA for the KHG segment. New agreements for the relocation of Wavecom utilities will be covered by Hawaiian Telcom.

See Figure 29 on the next page for the latest Utility Agreements Status Matrix.

Figure 29. Utility Agreements Status Matrix (by section)

Utility Agreements Status Matrix									
Utility Owner	***Status***	**WOFH**		**KHG**		**Airport**		**City Center**	
		ESA	**UCA**	**ESA**	**UCA**	**UCA**	**COMBINED ESA**		**UCA**
AT&T	*Executed*	May 11, 2011	Dec 20, 2011	May 18, 2012	Completed draft under COR review		Draft transmitted to utility		
	NTP	May 12, 2011	Dec 21, 2011						
Chevron	*Executed*	Dec 4, 2009		Nov 4, 2011					
	NTP	Dec 22, 2009		Nov 15, 2011					
Hawaiian Telcom	*Executed*	May 20, 2010	Back to HT to self-performing scope; HT reviewing new draft	May 10, 2012	Preparing draft		Close to agreement on T&C; awaiting final comments from utility		
	NTP	June 14, 2010							
HECO	*Executed*	By Agreement with PB	Apr 20, 2012	July 12, 2012		Draft transmitted to utility	Airport Bridging Agreement Executed 2/19/13 (agreement to be extended) City Center Bridging Agreement Executed 3/5/13 (agreement to be extended)		
	NTP								
Oceanic Time Warner	*Executed*	Dec 8, 2009	Dec 21, 2011	Jan 9, 2012	Completed draft under COR review		Executed 4/4/2013		
	NTP	Dec 22, 2009							
Pacific Lightnet/ Wavecom	*Executed*	Apr 28, 2010	Mar 12, 2012	Feb 15, 2012					
	NTP	Apr 29, 2010	Mar 13, 2012	Feb 16, 2012					
Sandwich Isle Communications	*Executed*	May 20, 2010	Not needed (no scope on WOFH section)	Apr 20, 2012	Completed draft under COR review		Draft transmitted to utility		
	NTP	Jun 8, 2010							
The Gas Company	*Executed*	Dec 18, 2009	Jun 30, 2011	Jun 1, 2012	Completed draft under COR review		Draft transmitted to utility		
	NTP	Dec 22, 2009	Jul 12, 2011						
tw telecom	*Executed*	Dec 2, 2009		Feb 14, 2012	No Scope – Oceanic to relocate for tw telecom for KHG		Executed 10/11/12		
	NTP	Dec 22, 2009		Feb 16, 2012					
Tesoro	*Executed*			Feb 15, 2012	Sent draft to utility for review		Draft transmitted to utility		
	NTP			Feb 16, 2012					

Legend: = Action this month; = Not applicable

COR = Corporation Counsel
ESA = Engineering Services Agreement
UCA = Utility Construction Agreement
UFRCRA = Combined Engineering and Construction Utility Agreement

3.6 Permits

- **Activities this month**
  - The Section 7 coordination letter with NOAA was sent April 2, 2013.
  - The City Center preconstruction Community Noise Variance application was submitted to the Department of Health on April 3, 2013.
  - Nationwide #6 Application for In-Water Geotechnical within the Airport section was submitted to the Army Corps of Engineers on April 9, 2013.
  - The Essential Fish Habitat Assessment package was received by NOAA April 10, 2013 and will provide recommendations to the FTA by May 10, 2013.
  - HART published a public notice in the Honolulu Star-Advertiser for the City Center preconstruction Individual NPDES permit.
  - The City Center preconstruction Community Noise Permit was received from the Department of Health on April 15, 2013.
  - On April 17, 2013, the HART Environmental Permit Team escorted personnel from NOAA, FWS, and the EPA on a field trip to six sites including: Waiawa Stream Tributary and Stream, Halawa Stream, Moanalua Stream, Kalihi Stream, Kapalama Stream, and Nuuanu Stream. This field trip was to supplement the ongoing coordination between the agencies for Essential Fish Habitat (EFH) and the Fish and Wildlife Coordination Act (FWCA).
  - Clean Water Act (CWA) Section 404 Individual Corps Permit application for work at Waiawa Stream and Tributary was submitted to the Corps of Engineers on April 18, 2013.
- **Look Ahead**
  - Upcoming significant permit activity:
    - Draft amendment request to the existing SCAP (Stream Channel Alternation Permit) for work at Waiawa Stream Tributary and Waiawa Stream.
    - Coastal Zone Management Consistency application for work at Waiawa Stream Tributary and Waiawa Stream will be drafted.
    - An Individual NPDES Permit and accompanying MS4s for preconstruction activities for the West Oahu Hoʻopili Station to be prepared.

3.7 Hawaii Department of Transportation (HDOT) Agreements

- **Activities this month**
  - Alignment-wide, the HDOT Traffic Management Consultant (contract MM-915) continues to review traffic signals, ITS and construction MOT for HDOT.
  - The HDOT Design Coordination Consultant for WOFH (contract MM-920), AECOM Technical Services, Inc. (AECOM), continues to review design submittals for HDOT.
  - SSFM, the HDOT Design Coordination Consultant for the Airport and City Center guideway (contract MM-922), is reviewing both guideway design submittals for HDOT.
  - KHG section:
    - The KHG Master and JUO agreements await resolution of HDOT comments regarding assignment to HART. HART/HDOT met in March to discuss this issue, HDOT has reaffirmed their position that the City and County of Honolulu must be a signatory to the agreement. A meeting between the Mayor and Governor was held in March to discuss the assignment. The Mayor will be investigating introducing a resolution before the City Council to meet the State's requirement.
    - AECOM, the HDOT Design Consultant for KHG (contract MM-921), continues to review KHG design submittals for HDOT.

- **Look Ahead**
  - Master and JUO Agreement to encompass KHG, Airport, and City Center in one document.

3.8 Other Design Activities

- **Activities this month**
  - Submitted architectural Standard and Directive Drawings for review to FTA/PMOC.
  - Revised Compendium of Design Criteria, Division 1/Standard Special Provisions, and Standard Specifications.
  - Meetings held with other agencies to discuss proposed Pearl Highlands' scour protection, bank protection, and flood alert warning system to coordinate and prepare for start of design.
  - Prepared scope for design option study for Kaloi Channel stabilization.

- **Look Ahead**
  - Provide Waiawa Stream hydraulic information to KHSG designer.
  - Finalize Waiawa Stream scour and bank protection reports.
  - Station Restroom assessment.

3.9 Interface

- **Activities this month**
  - Continued to request of interfacing contractors to provide need/delivery dates for Interface Control Documents (ICDs) elevated to HART for review and direction.
  - Continued implementing risk assessment guidelines for ICDs and Requests for Interface Data (RFIDs) elevated to HART.
  - Continued with assessment process and directions to "proceed" for Issues (ICDs and related RFIDs) elevated by WOFH, KHG and MSF.
  - Continued implementing CSC-MSF decision point sequencing tool to identify interfaces to be addressed prior to construction start.
  - Participated in all contract Interface Coordination Meetings.
  - Developed tracking tool for HART Interface Issues.
  - Continued to support development of tracking tool for RFIDs, ICDs and construction hold points.
  - A total of 605 RFIDs have been submitted (432 closed).
  - A total of 35 Interface Issues have been elevated (11 new, 3 closed, 3 on hold and 18 OSR).

- **Look Ahead**
  - Continue to support development of tracking tool for elevated Issues, including RFIDs, ICDs, and construction hold points.
  - Continue monitoring contractor RFIDs and ICDs pertaining to the Final Design Baseline (Revision 0).
  - Continue to review elevated issues for path forward to construction.

4 GROUP REPORTS

4.1 Safety and Security

- **Activities this month**
  - The Project had no construction safety or security issues in April. See Figure 30 below for a summary of issues to date.
  - AIS has been completed with no incidents noted.
  - HART met with GEC/HART staff to re-align Task 5.
  - HART Safety met with the Construction Safety Manager to review incidents, incident data and proactive plans, and updated all plans.
  - HART Safety continues to hold a weekly Core Systems Safety Meeting with Core Systems Contractor Ansaldo Honolulu Joint Venture (AHJV).
  - HART reviewed AHJV submittals for compliance and technical specifications.
  - HART staff continues to meet with HDOT bi-weekly to address FTA and HDOT issues.
  - HART distributed the base-lined Preliminary Hazardous Analysis (PHA) with no concerns.
- **Look Ahead**
  - HART will meet with Mayor Kirk Caldwell's office to define HART's Emergency plans.
  - Continue to hold safety meetings with contractors, particularly AHJV, committees and staff.
  - Finalize HART review of the updated Navy and courthouse Threat and Vulnerability Analysis (TVA's).
  - On-going discussion of security concerns with the TSA, HPD and Honolulu Fire Department (HFD), and of Emergency Plans with Emergency Responders and Emergency Management.
  - Continue to meet and review design issues with contractors.
  - Continue to process CIL/CEL's from all contracts.

Figure 30. Construction Safety Monitoring - Safety and Security Issues

Period/Date	Contract	No. & Type of Event	Comments
2011	----	**1 in 2011**	
January	----	2 in January	
February	----	2 in February	
March	KHG	1 in March	
April	WOFH-KHG	5 in April	
May	WOFH-KHG	5 in May	
June	WOFH-KHG	1 in June	
July	WOFH	3 in July	
August	WOFH	3 in August	
September	----	0 in September	
October	----	0 in October	
November	----	0 in November	
December	----	0 in December	
2012	----	**22 to date in 2012**	
January	----	0 in January	
February	----	0 in February	
March	----	0 in March	
April	----	0 in April	

4.2 Quality Management

- **Activities this month**
  - HART-GEC Quality Assurance (QA) staff weekly meeting to discuss overall Project QA/Quality Control (QC) issues with consultants, contractors, subs and internal staff.
  - Continued training and mentoring HART employees to ensure project participants are familiar with the latest approved plans and procedures, and have acquired required certifications.
  - Closing out 2012 QA Audit Schedule: Only one open QA Audit left to close.
  - Updating and implementing the Combined QA and Safety & Security (SS) Audit Schedule for 2013. Conducted: HART Internal Combined QA and SS Audit Report issued on 3/15.
  - Continued updating Project Baseline Plans and Procedures due to: new policies, re-organization, process improvement and lessons learned from the internal audits and PMOC suggestions.
  - Conducted Bi-weekly Quality Task Force (QTF) meetings with 10-contractors and consultants' QA teams to discuss status of: design activities; procurement activities; packaging, shipping, storage and preservation; NCRs and quality compliance and improvement.
  - GEC II (Parsons Brinckerhoff, Inc. [PB]):
    - Performed four (4) QA training of PB staff.
    - Performed two (2) internal QA Surveillance of Design & Engineering and Airport Station Group.
  - West Oahu/Farrington Highway Guideway (WOFH) – Kiewit Infrastructure West Co. (KIWC):
    - Closed QA System Audit of KIWC. (Audited WOFH and KHG together).
    - Approved WOFH/KHG QAP (Revision 3) and reviewing Inspection and Test Plan (ITP) Revision 3 submitted on 3/22.
  - Maintenance and Storage Facility (MSF) – Kiewit Kobayashi Joint Venture (KKJV):
    - Approved QAP (Revision 2) and Inspection and Test Plan submitted by KKJV.
    - Reviewing HNTB Corrective Action on NCR for constructability review requirements.
  - Kamehameha Highway Guideway (KHG) – KIWC:
    - QA/QC activities same as the WOFH contract.
  - Core Systems Contract (CSC) – Ansaldo Honolulu Joint Venture (AHJV):
    - Attended and participated in the Definitive Design Reviews of Rolling Stock and Systems presented by AHJV and subs.
    - Completed review of 3 Quality Plans of AHJV-approved sub-contractors (Siemens, Alcatel-Lucent and Johnson Controls). Following-up closure of comments issued.
  - Farrington Highway Stations Group (FHSG) – HDR Engineering, Inc. (HDR):
    - Participated in the weekly design review meetings.
    - Reviewed HDR Corrective Actions on NCRs issued by HART during the audit.
    - Preparing for the Contract Close-out including a Checklist for QA Records.
  - Airport Guideway and Utilities (Airport)– AECOM Technical Services, Inc. (AECOM):
    - Reviewing AECOM QAP (Revision 3) for the AUG.
    - Conducted HART QA Design Surveillance on 3/26.
  - City Center Guideway and Utilities (City Center) – AECOM:
    - Performed QA Surveillance of AECOM QA Audit of their Subcontractor RHA on 3/21.
    - Conducted HART QA Design Surveillance on 3/26.
  - West Oahu Stations Group (WOSG) – URS Corp. (URS):
    - Issued Design Process QA Audit Report to URS.
    - Reviewed URS Drilling and Sampling Plan.
  - Airport Station Group – AECOM:
    - Conducted HART QA Design Surveillance on 3/29.
  - Kamehameha Highway Stations Group (KHSG) – (AVA):
    - Reviewed and approved QAP (Revision 0) for KHSG.

- **Open Nonconformance (NCR) Log Summary**

NCR No.	Issued by	Reference/Activity	Corrective Action	Status
HART				
13-002-QA01	HART	Current established Internal Plans and Procedures do not reflect current practices	Update plans and procedures to reflect re-organization, new policies, process improvements and lessons learned	**Open**
13-002-QA02	HART	Contract Change Management Procedure No. 5.CA -02 does reflect current practice	Accelerate revision and implementation of Procedure No. 5.CA-02 Contract Change Management	**Open**
13-002-QA03	HART	Not all CMS users have attended basic training per Procedure 3.PM-01Contract Management System	Verify authorized users with access to CMS and identify users needing training, and perform training	**Open**
West Oahu / Farrington Highway Guideway (WOFH) DB Contract				
058	KIWC	Column 62 Bearing Pad Placement	Follow work plan; green tag for repair	**Open***
059	KIWC	Column 63 Bearing Pad Placement	Follow work plan; green tag for repair	**Open***
057	KIWC	Column 69 Drain Piping	Follow work plan	**Open***
051	KIWC	Pier 75 Bearing Plinths Rebar Place	Add QC inspection point to confirm elevation	**Open***
050	KIWC	Pier 76 Bearing Plinths Rebar Place	Add QC inspection point to confirm elevation	**Open***
049	KIWC	Concrete Column Finish Pier 76	Stand-down to discuss importance of quality	**Open***
042	KIWC	HECO 1-508-E1 Backfill Compaction	Compaction HP requires QA Inspector's release	**Open***

*** Open Items to be closed when Construction commences**

- **Look Ahead**
  - Continue mentoring and training personnel on revised approved Project Plans and procedures.
  - Continue QA/QC, Environmental and Buy America Compliance Oversight of Contracts executed to date.
  - Complete/Close-out 2012 QA Audit Schedule. Update and implement the 2013 Combined Management Systems (QA and Safety & Security) Audit Schedule.
  - Follow up on and close corrective and preventative actions on all NCRs and Observations issued.
  - Review Contractor/Consultant QAPs and implementing procedures (new and updates).

4.3 Right-of-Way

- **Activities this month**
  - Acquisitions:
    - Discussed changes due to alignment and station location at the Airport.
    - A check was issued to the First Circuit Court in order to advance the condemnation of TMK 9-7-23-008, a partial take for roadway widening along Kamehameha Highway.
  - Relocations:
    - At the Chinatown Station location, the master tenant terminated his lease and upon investigation HART found a residential tenant that requires relocation.

- Budget:
  - No expenditures were made during the reporting period.
  - $36.4M was spent to acquire 21 properties. The budgeted amount was $36.8M resulting in a budget underrun of $0.4M.
  - $2.3M has been expended for relocations.

- **Look Ahead**
  - WOFH Section
    - Re-appraise TMK 9-4-047-008, a partial take for the West Loch Station.
  - Kamehameha Section
    - Complete negotiations for partial takes associated with TMK 9-7-022-008 and TMK 9-7-022-021.
    - Complete acquisition of TMK -9-8-009-017, a full take for the Pearl Ridge Station.
  - Airport Section
    - Complete the appraisal process for TMK 1-1-016-007, a partial take along Waiwai Loop.
    - Complete acquisition of TMK 1-1-16-015, a full take for the Lagoon Station.
    - Complete negotiations for TMK 1-1-16-14, a full take for the Lagoon Station; and TMK 1-1-16-006 and TMK 1-1-16-005, full takes needed for the guideway.
    - Secure consents to do geotechnical testing and environmental assessments on properties along the proposed guideway and stations.
  - City Center Section
    - Acquisitions on hold until conditions of federal court order are met.
    - HART will relocate residential tenant from Chinatown station property.
    - Secure consents to do geotechnical testing and environmental assessments on properties along the proposed guideway and stations.

Figure 31. Right-of-Way Status

Section	Original # Parcels in FEIS	Current # Parcels Needed	Agreements In Process	Appraisals in Process	Offers	Acceptance	Ready for Construction
FULL ACQUISITION							
Total	**40**	**37**	**0**	**1**	**5**	**6**	**16**
WOFH	*14*	*14*	*0*	*0*	*1*	*1*	*12*
KHG	*5*	*3*	*0*	*0*	*0*	*1*	*2*
Airport	*5*	*4*	*0*	*0*	*3*	*1*	*0*
City Center	*16*	*16*	*0*	*1*	*1*	*3*	*2*
PARTIAL ACQUISITION							
Total	**163**	**134**	**8**	**2**	**4**	**2**	**7**
WOFH	18	10	2	1	0	0	6
KHG	21	7	4	0	3	0	0
Airport	31	35	2	1	0	0	1
City Center	93	82	0	0	1	2	0
EASEMENTS							
Total	**12**	**13**	**4**	**0**	**0**	**0**	**3**
WOFH	6	6	3	0	0	0	3
KHG	0	1	1	0	0	0	0
Airport	1	1	0	0	0	0	0
City Center	5	5	0	0	0	0	0
GRAND TOTAL	**215**	**184**	**12**	**3**	**9**	**8**	**26**

FEIS = Final Environmental Impact Statement, June 2010

Figure 32. Relocation Status

	Total Relocations	Initiated	90-day Notice	30-day Notice	Relocations Complete
Residential	**27**			**0**	**26**
WOFH	*25*			*0*	*25*
City Center	*2*				*1*
Business	**66**	**10**	**1**	**0**	**12**
WOFH	*5*	*1*	*1*		*3*
KHG	*4*		*0*	*0*	*4*
Airport	*7*	*6*			
City Center	*50*	*3*	*0*		*5*
Not-For-Profit	**1**				**1**
WOFH	*1*				*1*
TOTAL	**94**	**10**	**1**	**0**	**39**

Figure 33. Third-Party Agreement Status

Agreement	Completion	Target	Section	Status
University of Hawaii (UH) Master Agreement	Pending	July 2013	WOFH, KHG, City Center	Approval in concept was given by Board of Regents in April. Final agreement will be submitted to Board of Regents for approval May 16, 2013.
Leeward Community College (LCC) Sub-agreement	Pending	July 2013	WOFH	See UH Master Agreement.
UH West Oahu (UHWO) Sub-agreement	Pending	July 2013	WOFH	See UH Master Agreement.
Department of Land and Natural Resources (DLNR)	Pending	June 2013	WOFH	Will go before the Land Board at the end of May.
Department of Education Master Agreement and Consent to Construct	Feb 8, 2011		WOFH	Executed
DR Horton Agreement for Construction	Mar 7, 2012		WOFH	Executed
DHHL Master Agreement	Mar 10, 2010		WOFH, MSF	Executed
DHHL Consent to Construct	Dec 1, 2011		WOFH, MSF	Consent to construct in place.
DHHL License or Property Transfer	Pending	July 2013	WOFH, MSF	License agreement is being finalized for signature.
HDOT Master Agreement	Oct 31, 2011		WOFH	Executed
HDOT Joint Use & Occupancy (JU&O) Sub-agreement	Apr 5, 2012		WOFH	Executed
UH Urban Garden Sub-agreement	Pending	July 2013	KHG	See UH Master Agreement.
HDOT Master Agreement	Pending	July 2013	KHG	Matter has been elevated. A City Council master agreement is being developed.
HDOT JU&O Sub-agreement	Pending	August 2013	KHG	Will complete after KHG Master Agreement is completed.
Aloha Stadium / Department of Accounting & General Services (DAGS)	Pending	May 2013	KHG	Revised MOU scheduled to go to Stadium Board April 25 and DLNR Land Board in May.
U.S. Navy / General Services Administration (GSA)	Pending	N/A	Airport	Anticipate WOFH and Kamehameha easements complete by May 2013. Navy is processing 15 Airport Guideway Easements as one package.
U.S. Post Office Honolulu Processing Center	Pending	February 2014	Airport	Initiated request to secure an easement for Post Office Property. Awaiting design.
Federal Aviation Administration (FAA) Master Agreement	Pending	February 2014	Airport	As design progresses a determination will be made if an agreement is required.
HDOT Master Agreement	Pending	February 2014	Airport	Awaiting resolution of Kamehameha Agreement prior to completing HDOT Airport Agreement.
HDOT JU&O Sub-agreement	Pending	March 2014	Airport	Will complete after Airport Master Agreement is completed.
HDOT Master Agreement	Pending	June 2014	City Center	Pending awaiting completion of the KHG and Airport master agreement. On hold due to federal order.
HDOT JU&O Sub-agreement	Pending	July 2014	City Center	Will complete after City Center Master Agreement is completed.
Honolulu Community College (HCC) Sub-agreement	Pending	July 2014	City Center	Please see UH Master Agreement.
Federal Court House/GSA	Pending	Oct 2014	City Center	HART is reviewing the GSA draft agreement. Conducting monthly meetings with parties. On hold due to federal order.
HI Community Development Agreement (HCDA)	Pending	Oct 2014	City Center	Awaiting final design requirements for the guideway. On hold due to federal order.
DAGS	Pending	Oct 2014	City Center	Awaiting final design requirements for the guideway. On hold due to federal order.

4.4 Planning and Environment

- **Activities this month**
  - Programmatic Agreement (PA) [by PA Stipulation number]
    - II. Traditional Cultural Properties (TCPs):
      - Draft City Center TCP studies were in review at HART in early April with review documents made available to Consulting Parties at the end of the month. Consultation meetings have been scheduled for early May.
    - III. Identification and Protection of Archaeological Sites and Burials-Archaeological Inventory Surveys (AIS):
      - Section 3 (Airport) AIS: The draft Airport AIS Report was submitted to the State Historic Preservation Division (SHPD) for review on March 4. It is available for public review on the HART website http://honolulutransit.org/planning/iii-identification-and-protection-of-archaeological-sites-and-burials.aspx under AIS Report Airport. SHPD returned comments by March 29. Revisions are underway.
      - Section 4 (City Center) AIS: The draft City Center AIS Report was submitted to SHPD for review on April 8. It is also available for public review on the HART website noted above under AIS Report City Center.
      - Outreach continues to potential descendants for the 7 iwi kūpuna finds in the Honolulu Ahupuaʻa.
    - IV. Design Standards:
      - A Consulting Party workshop on the final design plans for the Farrington Highway Station Group (West Loch, Waipahu Transit Center and Leeward Community College Stations) was held on April 25.
    - V. Recordation and Documentation:
      - Historic American Buildings Survey/ Historic American Engineering Record/ Historic American Landscape Survey (HABS/HAER/HALS) [including required photo recordation of adversely affected historic properties activities and submission to the National Park Service (NPS)] is in progress for additional properties.
    - VI. National Register of Historic Places/Historic Landmark Nominations:
      - Preparation of National Register (NR) nomination forms for adversely affected historic properties is in progress. NR forms for bridges in the project corridor will be coordinated with the Hawaii Department of Transportation bridge inventory that is currently in progress. Mother Waldron Playground/Park nomination forms were submitted to SHPD for review in late April.
    - IX. B. Historic Preservation Program:
      - Pre-applications for a portion of the $2 million in historic preservation funds were due on March 15.
      - The Historic Preservation Committee is reviewing the applications received. Invitations to submit full applications will be sent to selected applicants in May.
  - Mitigation Monitoring Program (MMP)
    - MMP Reporting:
      - Internal March monthly reports were completed.
      - The first quarterly report for 2013 is in preparation for submittal to FTA at the end of April.
    - A field trip to investigate stream crossings in the HRTP corridor was conducted on April 17 with staff from HART, its consultants, the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration - Fisheries.
  - Planning Activities
    - HART and DPP continue to conduct monthly meetings to discuss Transit-Oriented Development (TOD) around the future transit stations, with a meeting held on April 19.

- Monthly HART Sustainability Committee Meetings continue as the team works to identify ways to improve the support of green features project-wide. A meeting was held on April 12.

- **Look Ahead**
  - Report Reviews:
    - Airport AIS Report public reviews conclude
    - Traditional Cultural Properties Study Consulting Party reviews begin
    - City Center AIS SHPD and public reviews conclude
  - Cultural Descendant Outreach and Meetings regarding iwi kūpuna finds continue.
  - Historic Preservation Committee to invite selected parties to submit full applications.
  - Farrington Highway Station Group Final Design neighborhood workshop TBD.
  - Traditional Cultural Properties Consulting Parties consultation meetings.

4.5 Risk Management

- **Activities this month**
  - The risk matrix in Figure 34 on the next page is used to score and rank identified risks. Risks have been assessed on probability of occurrence and most likely cost and schedule impact, if they occur. The rating is the average cost and schedule impact score multiplied by the likelihood score.
  - The top 10 risks in March are set out in Figure 35 on the next page. Top 10 risks for March remained the same as those identified in February.
  - As shown in Figure 36 on page 54, 1 new risk was added.
    - **Risk #172 (MSF)** - KKJV is waiting for payment of the additional design work requested by HART. Once payment is received they will submit the drawings for the additional design.
  - In March, 7 risks were deleted from the Risk Register, as shown in Figure 37 on page 54.
  - The total number of risks decreased by 6, from 339 to 333 risks in March, as 7 risks were deleted and 1 risk was added. See Figure 38 on page 55.
  - HART continues to work with the Owner-Controlled Insurance Program (OCIP) Consultant, Marsh USA, Inc., to identify and evaluate the insurable risks for the project and the agency.

- **Look Ahead**
  - Monthly contract/discipline specific risk workshops.
  - Update Risk Mitigation Plans for top risks.
  - Monthly Risk Assessment Committee Meeting.

Figure 34. Risk Matrix

Legend	Low (1)	Med (2)	High (3)	Very High (4)	Significant (5)
Probability	< 10%	10><50%	> 50%	75% ><90%	>90%
Cost	< $250K	$250K><$1M	$1M><$3M	$3M><$10M	>$10M
Schedule	< 1 Mths	1 ><3 Mths	3><6 Mths	6><12 Mths	> 12 Mths
Rating	< =3	3.1-9.49		> =9.5	

Figure 35. Top 10 Project Risks in March

Risk ID	SCC Code	Contract Package	Risk Description	Prob	Prob Rating	Cost Impact	Time Impact	March Risk Rating	Feb. Risk Rating
60e	10.04	Project Wide	Given limited geotechnical information available at this time, additional costs may be incurred associated with final design through construction.	90%	5	5	3	20	20
33	40.07	Project Wide	HDOT and DTS may require an upgrade to impacted intersections which would result in redesign and additional costs..	90%	5	5	2	17.5	17.5
11b	40.02	Project Wide	There may be insufficient Utility company resources available to meet the design, approvals and/or construction schedule. (Public Utilities - water, sewer, storm drain)	90%	5	4	3	17.5	17.5
PMOC26	10.04	Project wide	Implementation of modular station designs may impact guideway structure, require redesign and result in additional construction costs.	75%	5	5	2	17.5	17.5
28	40.04	Project Wide	Permits and approvals by other agencies may not be provided in a timely manner and delay the project.	75%	4	5	3	16	16
39	90.00	Project Wide	Contractors may not achieve contract required delivery dates of design information and construction interfaces to others.	75%	4	5	2	14	14
163	40.02	Project Wide	FTA requirement that all utility companies conform to Buy America requirements may cause delays and additional costs.	75%	4	5	2	14	14
169	60.01	City Center	Environmental documentation required under the Federal court case takes longer than planned, resulting in delays to ROW purchase for City Center.	75%	4	4	3	14	14
56	40.02	Project Wide	HDOT may not grant waiver to leave in place existing utilities to be abandoned that are not impacted by new structures requiring partial or total removal.	75%	4	5	1	12	12
167	10.04	Project Wide	AIS construction delay is longer than originally anticipated (9-12 months).	50%	3	5	3	12	12

Figure 36. Risks Added in March

Risk ID	SCC Code	Contract Package	Risk Description	Cal Prob	Prob Rating	Cost Impact	Time Impact	Risk Rating
172	90.00	MSF	Difficulty in negotiations of change orders results in delayed submission of extra design work. (ex. CSC changes and "Tiger Team")	75%	4	2	2	8

Figure 37. Risks Deleted in March

Current Risk ID	SCC Code	Contract Package	Risk Description	March 2013 Comments	Risk Rating	
					March '13	Feb. '13
70	20.02	WOFH	East Kapolei Station design could change, based on hydraulic and geotech study, and additional costs may be incurred.	Near Kaloi Chanel which requires additional design due to stable chanel. These changes do not impact WOFH, only the station contract - see risk #133. Risk has been deleted.		4
72	20.02	WOFH	UH West Oahu Station design could change, based on hydraulic and geotech study, and additional costs may be incurred.	Near Kaloi Chanel which requires additional design due to stable chanel. These changes do not impact WOFH, only the station contract - see risk #135. Risk has been deleted.		4
161a	40.04	WOFH	Potential that DPP stormwater requirements that are to be adopted in May 2013 may require redesign of contracts not complete with final design.	Risk is deleted because it is not an impact to WOFH.		2.5
94a	50.01	WOFH	Equipment, structures, etc. supplied by other contractors may not meet criteria required by Core Systems Contractor.	Risk has been deleted because it is a duplicate of 39 and 58. Any changes that CSC initiates after the WOFH design is finalized, will be on CSC to adjust their design and the risk is covered in the CSC risk register. Additional costs will not be incurred by guideway contractors.		7.5
94b	50.01	KHG	Equipment, structures, etc. supplied by other contractors may not meet criteria required by Core Systems Contractor.	Risk has been deleted because it is a duplicate of 39 and 58. Any changes that CSC initiates after the KHG design is finalized, will be on CSC to adjust their design and the risk is covered in the CSC risk register. Additional costs will not be incurred by guideway contractors.		7.5
94d	50.01	Airport Guideway	Equipment, structures, etc. supplied by other contractors may not meet criteria required by Core Systems Contractor.	Risk has been deleted because it is a duplicate of 39 and 58. Any changes that CSC initiates will be on CSC to adjust their design and the risk is covered in the CSC risk register. Additional costs will not be incurred by guideway contractors.		7.5
94e	50.01	City Center Guideway	Equipment, structures, etc. supplied by other contractors may not meet criteria required by Core Systems Contractor.	Risk has been deleted because it is a duplicate of 39 and 58. Any changes that CSC initiates will be on CSC to adjust their design and the risk is covered in the CSC risk register. Additional costs will not be incurred by guideway contractors.		7.5

Figure 38. Risks by Contract Package

Contract Packages	February 2013 # of Risks		March 2013 Update				
			Total # of Risks		Newly Sub-Divided Risks	New Risks	Deleted Risks
Project Wide	69	*18*	69	*18**	0	0	0
WOFH	53		49		0	0	4
MSF	21		22		0	1	0
KHG	42		41		0	0	1
Core Systems Contract	19		19		0	0	0
Right of Way	11		11		0	0	0
Airport Guideway	51		50		0	0	1
City Center Guideway	57		56		0	0	1
Project Wide Stations	3		3		0	0	0
Farrington Highway Stations	2		2		0	0	0
West Oahu Stations	4		4		0	0	0
Kamehameha Highway Stations	3		3		0	0	0
Airport Section Stations	1		1		0	0	0
City Center Section Stations	3		3		0	0	0
Total	**339**	***288***	**333**	***282****	**0**	**1**	**7**

*51 Project Wide risks were determined to be applicable to various contracts and have been sub-divided into those contracts and evaluated at the contract level. Total number of risks contained in the risk register is 333. There are a total of 282 risks when excluding the duplicated Project Wide risks.

4.6 Community Outreach

- **Activities this month**
  - HART's public outreach in April included key presentations at colleges and at community events, including Hawaii's Science and Engineering Fair. Community connections were made at local events, including displays and presentations for local business groups and organizations, such as the American Business Women's Association, Hawaii-Chapter, WTS events and the Pacific Rim International Conference on Disability & Diversity.
  - HART Executive Director and CEO Dan Grabauskas and HART Board of Directors Chairwoman Carrie Okinaga joined Honolulu Mayor Kirk Caldwell and Honolulu City Council Chairman Ernest Martin on a visit to Washington D.C. The group met with Federal Transit Administration officials and with Hawaii's Congressional delegation to update them on the rail project.

Figure 39. HART Executive Director and CEO Daniel Grabauskas; Honolulu Mayor Kirk Caldwell; U.S. Department of Transportation Secretary Ray LaHood; Federal Transit Administrator Peter Rogoff; HART Board of Directors Chairwoman Carrie Okinaga; and Honolulu City Council Chairman Ernest Martin.

- Media coverage included stories on the HART CEO's first year on the job; integration efforts between Oahu's bus and rail systems; and the inclusion of $250 million in federal funding in President Obama's recently released federal budget.

Figure 40. HART's CEO speaks to members of Hawaii's Air Cargo Alliance regarding the rail project's plans for the airport portion of the alignment.

- **Community Input**
  - HART's public information team responded to 15 public inquiries this month that came in via the agency's website, email and 24-hour hotline. Questions this month included inquiries regarding property acquisition and the transit art program.

- To date, HART's outreach team has participated in:
  - 1,424 presentations and events
  - 746 Neighborhood Board meetings

- **Looking Ahead**
  Coming in May:
  - HART's outreach events include "green" events focused on environmental sustainability, and meetings with local rotaries and business groups.
  - HART unveils a model of one of its 21 stations.

5 STAFFING

HART staffing activities in April are summarized in Figure 41 below. HART staffing projections are shown in Figure 42 below and Figure 43 on the next page. For organizational structure detail, see the latest HART Project Organization Chart in Appendix A on page 60.

Figure 41. Staffing Activities

Title	Group	New/Existing HART position (City or PMSC)	Position Status	Start Month
Engineering and Construction				
Construction	Engineering	New (PMSC)	Filled - PMSC	Apr
Assistant Project Manager (CE III)	Airport & City Center	New (City)	Interviewing	
Budget and Finance				
Procurement and Specifications Specialist I/II*	Procurement and Contracts	Existing (City)	Interviewing	
Procurement and Specifications Specialist III/IV/V*	Procurement and Contracts	Existing (City)	Interviewing	
Grants/Financial Planner	Grants/Financial	Existing (City)	Recruiting	
Deputy Procurement Officer	Procurement/Contracts	New (City)	Interviewing	
Internal Controls Analyst	Internal Controls	New (City)	Interviewing	
Accountant IV	Accounting	New (City)	Filled	Apr
Planning, Utilities, Permits & Right of Way				
Architectural Historian	Planning	New (City)	Filled	Apr
Planner V/VI* (Permits/Hazmat)	Utilities, Permits	New (City)	Recruiting	
Project Controls				
Scheduler	Project Controls	Existing (City)	Filled	Apr
System Safety & Security				
Safety Certification Manager	System Safety and Security	New (PMSC)	Selected	Jul
Safety Specialist	System Safety and Security	New (City)	Filled	Mar
Civil Rights				
Civil Rights Specialist (DBE, EEO, Certified Payroll)	Civil Rights	New (City)	Selected	May
Administrative Services				
Information Technology Support Technician II	Administrative Services	Existing (City)	Filled	Apr
Information Technology Support Technician I/II*	Administrative Services	Existing (City)	Selected	May

*Per qualifications.

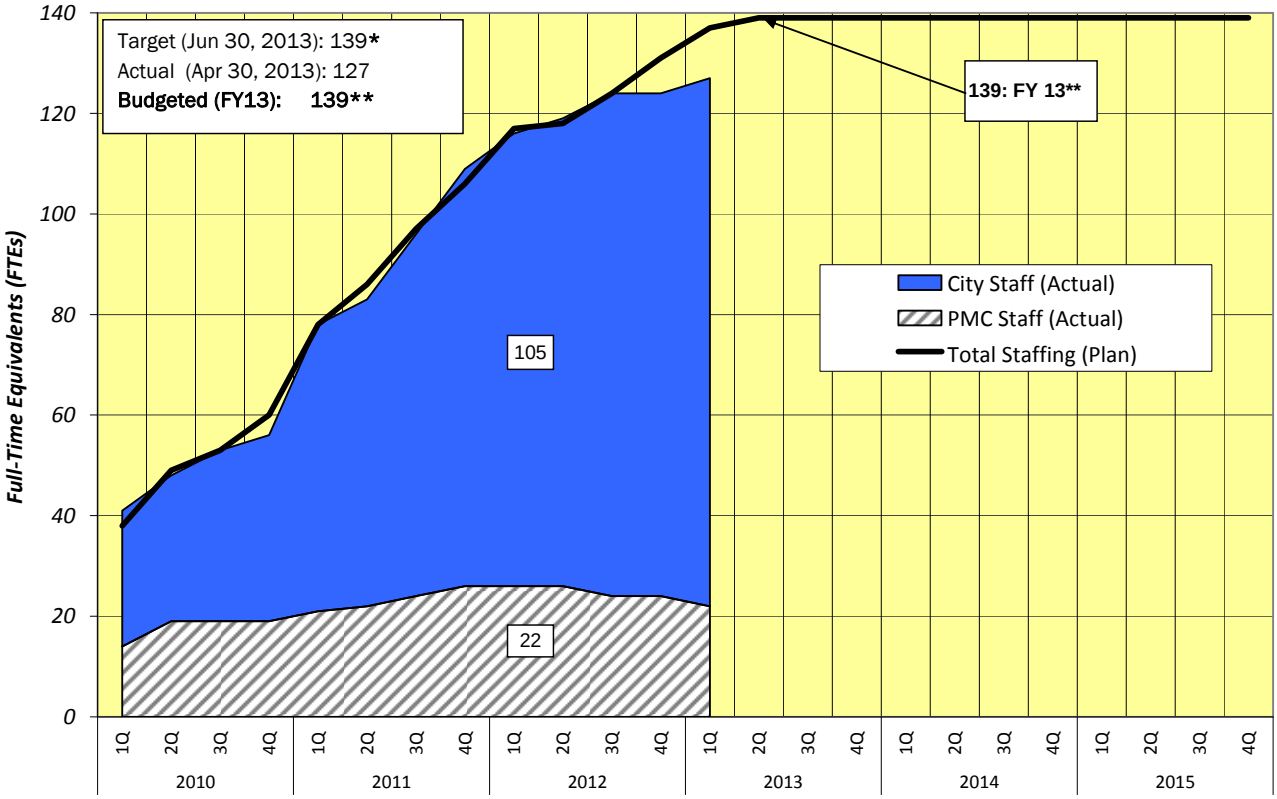
Figure 42. HART Staffing Projection in the Current Staffing Plan

[Also see the Project Staffing (Actual vs. Planned) graph in Figure 43]	as of:	# Employees
Target*	Jun 30	139
Actual*	Apr 30	127
Full-Time Employees budgeted for FY13**	Jul 1	139

**Including PMSC staff **Excluding PMSC staff.*

HART currently receives direct project support in centralized functions from the following City departments: Honolulu Police Department (HPD), Department of Information Technology (DIT), Department of Budget and Fiscal Services (BFS), Department of Design and Construction (DDC), Corporation Counsel (COR) and Department of Human Resources (DHR); and from the State of Hawaii Department of Transportation (HDOT) on Consultant Services Contracts.

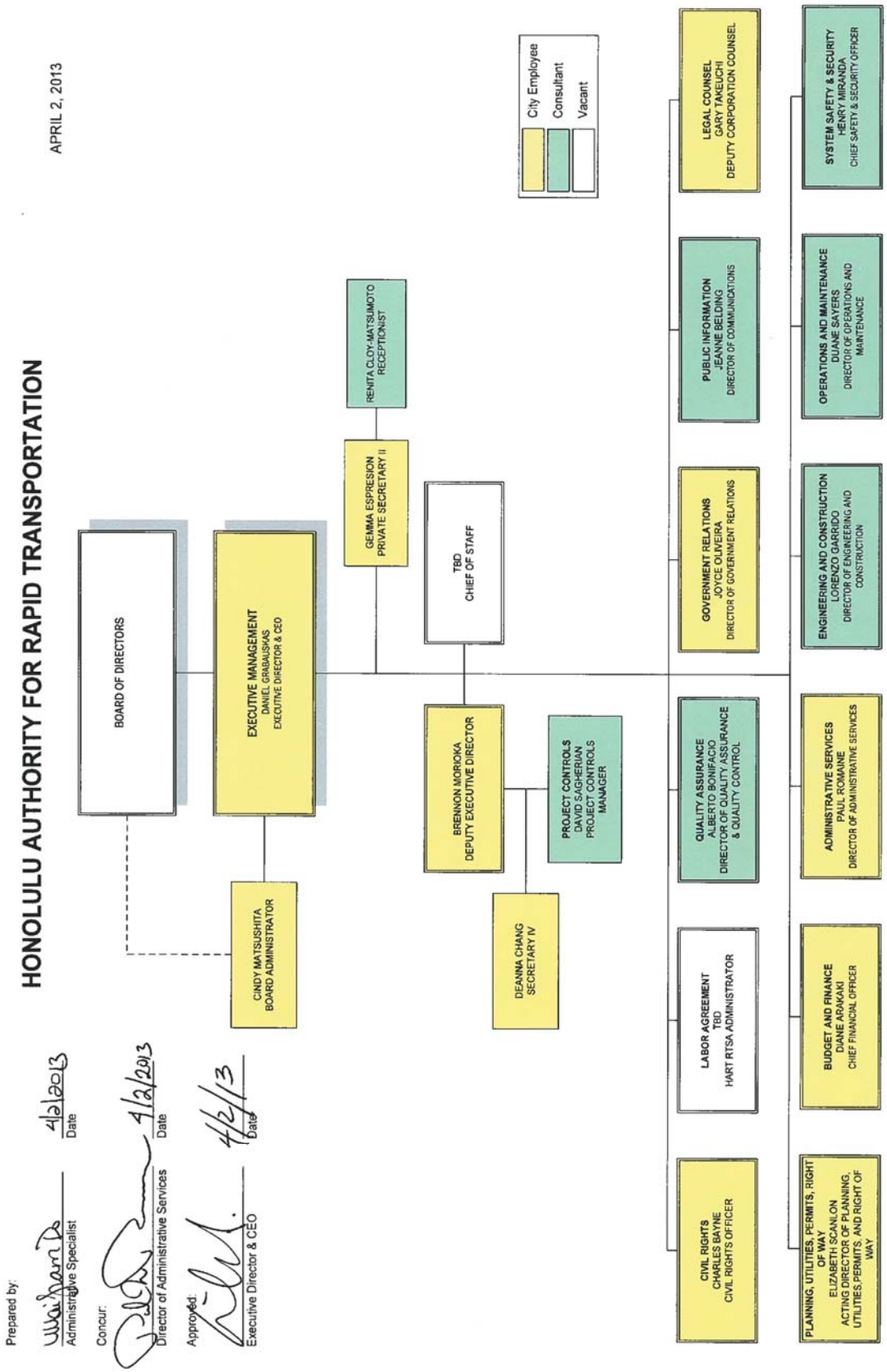
Figure 43. Project Staffing (Actual vs. Planned)



* In accordance with Staffing and Succession Plan Rev 5, dated 5-25-12
** 139 positions authorized in FY 2013 HART Operating Budget

6 APPENDICES

Appendix A. Project Organization Chart



Appendix B. Project Alignment

HONOLULU AUTHORITY for RAPID TRANSPORTATION

May 2013

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HART Business Plan

INTRODUCTION

This document provides a third year Business Plan for the Honolulu Authority for Rapid Transportation (HART) covering fiscal year 2014 (July 1, 2013, through June 30, 2014). It is designed to describe HART's business activities and resource allocations during the agency's third year of operations in accordance with its responsibility for building and ultimately operating the Honolulu Rail Transit Project (HRTP), from East Kapolei in West O'ahu to Ala Moana Center (HRTP).

The FY2014 HART Business Plan describes why HART exists as an organization, the goals and performance measures the agency has established, what it will seek to accomplish during the third year of operations, and how it will go about performing its responsibilities. The HART Board of Directors (BOD) will review and approve the FY2014 Business Plan in conjunction with its review and final approval of a FY2014 Budget. In the future, it is envisioned that HART will prepare an annual Business Plan with a multi-year moving timeframe. The annual Business Plan will provide historical information and a projection of key operating and financial information for at least one year beyond the fiscal year which is the focal point of the Plan to provide a look-ahead for management planning and performance trend oversight purposes.

Summary of FY2013 Highlights and Progress

FY2013 was HART's second year of existence. During the year, the HART BOD, staff, and consultant team made progress toward achieving the vision of bringing rapid transportation to O'ahu despite major challenges presented by litigation. Shown below is a brief summary of major events and accomplishments during HART's second year:

Project Delivery:

- Construction was started on the West Oahu/Farrington Highway guideway section and 16 columns were completed. Three full properties needed for the HRTP were acquired and eminent domain proceedings were started on two additional properties.
- Construction activities on the West Oahu/Farrington Highway guideway section were suspended as a result of a Hawaii Supreme Court ruling (*Kaleikini v. Yoshioka, et al.)* mandating that HART complete an Archaeological Inventory Survey (AIS) on all four sections of the alignment. Steps were taken to perform the necessary AIS work which was completed two months ahead of schedule. During the AIS work, a first-of-its-kind cultural monitoring program was developed. This program will serve as a model for the remainder of construction on the HRTP. The results of the AIS were submitted to the State Historic Preservation Division (SHPD) for review and approval for the entire alignment. The resumption of construction awaits SHPD action.
- 8,735 tons of running rail (all the rail needed for the project) was rolled, shipped and received by HART. The power contact rail is in the process of being delivered.

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- In response to public input and other comments, the HART BOD approved funding for additional seats on the HRTP railcars to be provided by Ansaldo Honolulu JV. As a result, seating capacity will be increased by 25%.
- An agreement was reached with the Hawaii Department of Transportation (HDOT) on funding for the State Rail Safety Oversight Program required by federal law. HART and HDOT worked cooperatively to hire a nationally recognized consultant who will assist in implementing and managing this program.
- The HART Transit Oriented Development (TOD) Committee formed a TOD Stakeholders Group to help promote TOD. The group, which will consist of various government and private sector stakeholders, will focus on providing and sharing information to facilitate TOD.

Finances:

- Successfully completed the required steps to receive a Federal Full Funding Grant Agreement (FFGA) from the Federal Transit Administration. The FFGA was executed on December 19, 2012. A key step in this major accomplishment was City Council action to approve a $450 million "line of credit" for the HRTP to be used only if absolutely necessary for future funding shortfalls.
- As a result of the FFGA, HART received $67.5 million in March 2013 bringing total federal funding received to date for the HRTP to $132 million.
- Reduced the FY13 Operating Budget by $1.5M and three staff positions.
- Completed the agency's first annual financial audit cycle, which yielded overall favorable conclusions and findings related to the transition from DTS to HART. Issued first annual financial statement for HART since becoming a semi-autonomous unit.
- General Excise Tax Surcharge (GET) collections to date total $1.029 billion which is $32.8 million less than forecast in the June 2012 Financial Plan.
- Took aggressive action to keep the cost impact of the construction suspension below the estimated $7-10 million per month.

Other Litigation Matters:

- In the case of *Honolulutraffic.com et al. v. FTA*, *et al.*the U.S. District Court ruled in favor of the City and FTA on a vast majority of the plaintiff's claims. However, the Court did rule that the City and FTA (1) had failed to adequately identify Traditional Cultural Properties (TCP) prior to the issuance of the Record of Decision on the project, (2) failed to adequately consider the Beretania Street Tunnel alternative, and (3) failed to consider whether the project would constructively "use" Mother Waldron Park. The decision resulted in additional analyses and a suspension of construction and real estate acquisition activities in section four (City Center Section) of the alignment. A revised TCP report was prepared and transmitted to SHPD in compliance with the ruling. In addition, a draft Supplemental EIS was prepared and filed with the FTA which addressed the Beretania Street alignment and Mother Waldron Park issues. The TCP reports for Phase 4 and a Supplemental EIS have been prepared and further activities will be undertaken to seek approval of these additional analyses.
- In the case of *Bombardier Transportation (Holdings) USA, Inc.v. Director, Dept. of Budget and Fiscal Services, et al.*, the State of Hawaii Intermediate Court of Appeals denied the appeal and upheld the City's decision to disqualify Bombardier's proposal for

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the core systems contract solicitation. The ruling affirmed that the City's procurement process was done properly and in accordance with state law.

Organizational Development:

- Significant organizational and staffing changes occurred in FY2013, all designed to improve the effectiveness and efficiency of the organization. Key changes included:
  - ✓ Hiring of a Deputy Executive Director from the local community with considerable transportation, construction and public sector experience.
  - ✓ Hiring of an experienced Chief Financial Officer and staff to improve fiscal processes, accounting, financial analysis and reporting.
  - ✓ Two senior management positions were eliminated to flatten the organization and the area of public involvement was streamlined by eliminating positions and external contractors, all of which saved money.
  - ✓ A senior level Director of Operations and Maintenance position was established in recognition of HART becoming an operating organization in the future.
  - ✓ Changes in the Engineering and Construction area included consolidation of responsibilities and the internal promotion of three staff members to key positions within the restructured area. In addition, a new Manager of Project Controls was hired and now reports to the Deputy Executive Director. Also, the Core Systems Manager and the Risk Manager were replaced with experienced personnel.

- The HART BOD approved the creation of a Permitted Interaction Group (PIG) to develop and recommend a Fare Policy to the full Board. The PIG will investigate fare policies of other transit agencies including bus and rail farebox recovery ratios, possible alternative sources of revenue, fare collection systems and technologies.

- Finally, a working group was established with Oahu Transit Services (OTS) to explore how best to integrate bus and rail services, as well as opportunities for consolidating administrative functions between HART and OTS to improve efficiency and customer service.

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HART Business Strategy

Public transportation is a service business that utilizes both human and physical assets to deliver its product in the marketplace. A transit agency is in competition with the automobile to increase its share of the travel market. Success in achieving a greater market share requires that a transit agency have a clear and understandable strategy for how it will go about delivering its product to prospective consumers. As a public agency, HART's business strategy must not only be easily understandable to the agency's employees and contractors but must also be understandable to the general public.

This section of the FY2014 HART Business Plan describes the basic elements of the business strategy for the agency. These elements are described below and include statements on why the agency exists and what it is trying to achieve, as well as a framework for how HART will go about accomplishing what the public has asked it to do. This framework includes Goals and a "Balanced Scorecard" (BSC) for measuring and tracking over time how well HART is doing its job. (Note: A later section of the FY2014 Business Plan describes the organizational development strategy HART is utilizing to achieve its Mission and Vision and accomplish the Goals the BOD has established.)

Mission Statement *(why the agency exists)*

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

Vision Statement *(what HART is trying to achieve)*

In accomplishing its Mission, HART will contribute to the quality of life on O'ahu by:

- Mobility: Improving mobility for all residents, visitors, and businesses on O'ahu particularly in the densely populated and congested corridor along the urbanized southern shore of the island.

- Reliability: Improving the reliability of travel in the corridor by offering a travel choice that will not be subject to at-grade level traffic congestion.

- Land Use: Supporting the City's land development policy by providing access to an area targeted for development of a new urban center and helping create transit-oriented development along the rail line.

- Equity: Providing people who are dependent on public transportation with an improved means of accessing economic and social opportunities and activities.

- Sustainability: Protecting the environment and lessening dependence on non-renewable fossil fuels.

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(Note: The above Vision Statement is based in part on the Environmental Impact Statement prepared for the HRTP.)

Goals *(how HART will go about accomplishing the Vision and fulfilling its Mission)*

In order to accomplish its Mission and realize the benefits described in the Vision, HART must accomplish the following goals:

1. Project Delivery: Complete the project on time and within budget while:

    - Ensuring the safety and security of the public, HART employees, and construction workers;
    - Minimizing the impacts on adjacent natural, cultural, and built environments and communities; and
    - Fulfilling environmental mitigation commitments.

2. Service Delivery: Ensure that the design and actual construction of the project will facilitate the delivery of safe, high quality, and cost-efficient service in the future.

3. Stewardship of Resources: Maintain public trust through the prudent and transparent use of financial, human, and environmental resources.

4. Livability: Support the creation of mixed use, pedestrian-friendly, compact development along the rail line.

5. Partnerships: Pursue partnerships with the private sector to create economic opportunities and generate income and cost savings for the rail transit system.

6. Agency Culture: Foster an organization that is open, accountable, inclusive, and delivers better than promised results.

Performance Metrics

Performance expectations and metrics flow out of the Vision and Goals for the agency and are intended to help an organization measure its progress toward achieving the Vision and Goals. Performance metrics for HART will help the BOD and agency management, as well as the Authority's stakeholders and the general public, measure and evaluate the agency's progress and will aid in maintaining transparency on what HART is doing with taxpayer money. Management staff will compile and provide periodic reports to the BOD on the performance metrics. The information will also be reported to the City Council and the community in an annual report.

Performance metrics for HART have been incorporated into a BSC for the agency. The BSC establishes and will track over time metrics that measure performance in achieving the Goals which the BOD has established for the agency. The proposed HART BSC is shown in Appendix A to the Business Plan.

As shown in Appendix A, the HART BSC is structured to provide performance measures and metrics for each of the six Goals the BOD has approved. The BSC establishes the fiscal year

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objectives for each measure. Space is provided for HART management to provide information on actual results or status for each of the performance measures and metrics delineated in the BSC during quarterly reports to the HART BOD. These reports will include a summary of any material changes in the status of performance measures to enhance the transparency of the progress being made on implementing the HRTP.

In FY2014 and for the next several years HART will be engaged in completing the design and construction of the HRTP. Actual operation of rail service will not occur until 2017. As such, the BSC shown in Appendix A is heavily oriented toward project implementation. The BSC does include some measures dealing with Service Delivery as it relates to the current project implementation stage of the project. Additional metrics will become meaningful when actual revenue service begins; illustrative examples of such metrics include:

- Ridership level.

- Reliability measures including:
  - On-time departures/arrivals.
  - Miles between mechanical failures.
  - Elevator and escalator availability (% of time available during operating hours).
  - Fare collection equipment availability (% of time available during operating hours).

- Safety and Security measures including:
  - Accidents per 100,000 passengers.
  - Security incidents per 100,000 passengers.
  - Employee on-the-job injuries.

- Financial measures including:
  - Operating Ratio.
  - Cost per vehicle hour and vehicle mile.
  - Cost per passenger.
  - Accident Claims received/closed/outstanding.

Given the current project implementation of HART's business activities, it is envisioned that HART management will provide quarterly updates of the HART BSC in reports to the BOD and the public. When actual revenue service begins on the rail line, monthly BSC reports will become relevant.

Using a BSC which ties to the Goals that HART has established will enable the agency to evaluate its progress on achieving the agency's Mission and Vision and to report to its stakeholders and to the community.

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FY2014 Work Program

Agency Business Operations

HART came into existence July 1, 2011, and has functioned to date as a semi-autonomous agency of the City & County of Honolulu government. During FY2014, HART will continue to use various City business systems and administrative practices as appropriate when conducting the agency's business activities (e.g. Department of Transportation Services (DTS) procedures for Transportation Improvement Program (TIP) modifications and EEO reporting; the City's accounting and payroll systems; and the city's Enterprise Resource Planning (ERP) systems for both financial and Human Resources applications). In addition, HART will continue to receive services provided by other City Departments (e.g. Budget and Fiscal Services, Corporation Counsel, and Design and Construction). Individual agreements with City Departments set forth the scope and terms of the services to be provided. This support from the City enables the agency to continue concentrating its resources on the implementation of the HRTP. During FY2014 and beyond, HART will evaluate the extent to which it should develop its own business systems to improve efficiency and delivery of needed business services.

HART will need to complete a number of steps during FY2014 to further develop the organizational capacity and capability to fulfill its Mission as described in the preceding section. Several of the actions that will be taken are designed to ensure that HART will maintain eligibility to receive Federal funding for the HRTP. A preliminary listing of the tasks that will be undertaken in FY2014 is as follows:

- Continue to update BOD operating procedures and practices.
- Develop new agency operating procedures and practices as needed.
- Complete agency reorganization and recruit and hire key management, technical, and support staff.
- As required, adopt or modify BOD and HART policies guiding the agency business activities (e.g. financial policy and procurement policy).
- Continue to add and modify administrative procedures and practices that are specific to a transit agency in areas such as procurement and contract administration, safety and security, employee relations, and management reporting.
- Maintain a management reporting system on key performance metrics and financial information including:
    - Continue to develop internal processes that will enhance the control over fiscal processes while increasing processing efficiencies.
    - Achieve zero findings in the Authority's second annual audit, specifically addressing deficiencies identified in 2012's audit report.
    - Continue to build finance, accounting and internal controls capability.

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- Continue development of a brand identity for HART.

- Regularly update and communicate with stakeholders, including the Mayor and City Council, state officials and the Oahu Metropolitan Planning Organization Policy Committee to ensure a flow of information regarding the progress of the project.

- Continue the creation of an organizational structure and culture that will enable the fulfillment of the agency's Mission and Vision.

EEO and Disadvantaged Business Enterprise (DBE) Programs:

In accordance with federal and state laws and requirements, HART maintains active programs to ensure equal employment opportunities and to foster the involvement of disadvantaged and small businesses in HART's business activities. The EEO Program is coordinated with the City's EEO Office and with DTS. Oahu Transit Services as the area's bus operator maintains its own FTA approved EEO Program. HART staff prepares combined reports for both the rail and DTS programs which DTS submits to the FTA for review and approval. The FTA has approved the combined EEO program for HART/DTS for the next three years.

HART manages its own DBE Program utilizing the State of Hawaii's Unified Certification Program to identify DBE firms and works with HDOT to reach out to these firms. HART has an FTA authorized 13% goal for DBE participation in the overall HRTP and does not set annual goals. Contract specific goals are established when or if appropriate. Program staff will be working to gain increased DBE participation in upcoming construction contracts whenever possible.

HRTP Project Implementation

Project Description:

The HRTP is a proposed 20-mile light metro rail line in an exclusive right-of-way with fully automatic (driverless) train operation. All of the alignment, with the exception of the access and egress from the Maintenance and Storage Facility and the Leeward Community College Station, is elevated above existing highways and arterial roadways. The rail line includes 21 stations from East Kapolei, in West O'ahu, to Ala Moana Center. Initial service is scheduled to start in 2017 from the western end of the alignment at the East Kapolei Station to the Aloha Stadium Station with full service operations to Ala Moana Center starting in 2019. Full service is anticipated to operate 20 hours per day, with 3-minute headways during peak periods and 6-minute headways in the midday. End-to-end travel time is estimated to be 42 minutes. Service will be provided by 2-car trains. Average weekday rail boardings in 2030 are projected to be about 116,000 passengers. A peak hour directional maximum load of about 8,000 passengers per hour is anticipated in 2030.

Appendix C provides a more detailed description of the project along with background on the planning for the project.

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Project Status and FY2014 Work Activity:

- Overall, the HRTP is currently in final design phase of project development with construction work programmed to re-start and continue on two Design-Build contracts for guideway sections and the Maintenance and Storage Facility.

- Contracts for a Program Management Support consultant (PMC) and General Engineering consultant (GEC) services will be continuing. The HART Operating Budget provides funding for 139 positions for the project which includes positions provided by the PMC.

- During Q1 of FY2014, efforts will continue to resolve and satisfy both the Hawaii Supreme Court and U.S. District Court decisions which have caused construction work to be suspended including:.
    - Assisting SHPD in completing its AIS review and issuance of the necessary authorizations.
    - Completing the FTA and federal court reviews of the Supplemental EIS.
    - The objective is to restart construction by the end of Q1 to minimize delay claims and protect the project schedule from further delay.

- In preparation for the restart of construction, during Q1 of FY2014:
    - Complete negotiations on outstanding delay claims arising out of the suspension of construction work.
    - Work towards a "clean slate" with contractors by negotiating settlement of all outstanding notice to proceed (NTP) delay claims arising out of the start of the project.
    - To the extent possible, utilize the period to acquire old and new permits, rights of entry, land acquisition, and other agreements necessary to limit or eliminate exposure to future delays and delay claims.

- In FY2014, for the Design-Build (DB) contracts:
  At the end of FY2014, overall construction of the West Oahu/Farrington Highway Guideway is expected to be 30% complete. The Kamehameha Highway Guideway contract design will be completed by the end of FY2014 with construction scheduled to be 20% complete. The Maintenance and Storage Facility design will be completed and construction is scheduled to be 40% complete at the end of FY2014.

- The Design-Build-Operate-Maintain (DBOM) Core Systems contract for train control, communications, operations and maintenance, and revenue vehicles, will be in the design phase and this effort will continue throughout FY2014 with contract completion at that time estimated at 10%.

- For the Design-Bid-Build (DBB) contracts:
    - The Airport Guideway and Utilities design will be completed by FY2014, with construction on the Airport Utilities expected to be 10% complete by the end of FY2014. Construction on the Airport Guideway will not begin until FY2015.

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- The City Center Guideway and Utilities design will be completed by FY2014. Construction on the City Center Guideway and Utilities will not begin until FY2015.
- The Farrington Highway Station Group design will be completed by the end of FY2013, and construction will be 20% complete at the end of FY2014.
- The West O‘ahu Station Group design will be completed in the beginning of FY2014, and construction will be 5% complete at the close of FY2014.
- The Kamehameha Highway Stations design will be completed by the beginning of mid-FY2014, and construction will be 5% complete by the end of FY2014.
- The Airport Stations design will be completed by FY2014, with construction starting in FY2015.

- Continue to develop Native Hawaiian community and other key stakeholder relationships.
  - Refine the model Cultural Monitoring Program for implementation during the period of construction.

- During FY2014, advance planning for future operations on the rail system:
  - Establish more robust DTS-OTS-HART-Ansaldo cooperation on fare media/collections system; budget synergies; operational intersects and coordination; customer services; management structures; etc.
  - In conjunction with the DTS-OTS-HART-Ansaldo planning effort, the Fare Policy PIG will undertake its work to develop and recommend a Fare Policy and fare collection system for HART. It is anticipated that a final decision on a Fare Policy and fare collection system for the HRTP will be made during FY2014.
  - Consider additional customer service features such as WiFi.

- Implement the project’s Public Art Program to incorporate public art into various design elements of the HRTP.

- Deliver significant contract milestones, and major contract awards expected over the next 12 months, to keep the project on schedule.

<u>Land Use Connection: Transit-Oriented Development</u>

The Revised Charter of Honolulu (Charter or RCH) authorizes HART “to promote, create and assist transit oriented development projects near fixed guideway system stations that promote transit ridership, and are consistent with the intent of the adopted community plans and zoning.” RCH 17-103.2(n). Likewise, the Charter mandates that the Executive Director “administer programs promoting appropriate developments near transit stations, including compilation of city incentive programs,” and “review development projects having significant impact on the operation of the fixed guideway system.” RCH 17-104(m) and (n).

HART is the steward of a large-scale public investment. Federal, State, and City policy direction to concentrate growth around transit stations further enhances the value of real property adjacent to transit stations. By promoting high quality, more intensive development

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on or near properties adjacent to transit stations, the agency can increase ridership, support long-term system capacity and generate additional revenues for transit, such as increased fare collection from increased ridership and changes in the fare policy, and joint development (JD) opportunities, not anticipated during project planning. Also, such development creates attractive investment opportunities for the private sector and facilitates local economic development goals.

The State and City along with the federal government control the planning and permitting authority for all of the land along the 20-mile corridor. Coordination of these activities between the respective agencies is necessary to successfully leverage public and private investment in the corridor. In coordination with HART, both the State and City are preparing neighborhood TOD plans for transit station areas and investigating revisions to the land use regulatory requirements, which will provide the policy framework for private development. The neighborhood TOD plans will support the creation of vibrant mixed-use neighborhoods consisting of workforce and affordable housing, retail shopping locations, and other infrastructure improvements necessary to improve safety, promote healthy lifestyle habits such as walking and biking, and increase rail ridership.

For the City, DPP is responsible for developing transit-oriented development (TOD) neighborhood plans and zoning regulations for station TOD areas for the eventual adoption by the City Council. During FY2014, HART TOD – land use planning staff will continue to provide technical support in areas such as system description, modal connectivity, station access, parking and safety and security to DPP in its planning efforts, which will include coordination with other cognizant City and State agencies, special interest groups (e.g. disabled, and elderly), the private sector, and the public at community meetings to develop the TOD plans for the areas surrounding the transit stations.

During FY2014, HART staff will actively pursue, develop, and execute MOUs and MOAs with public and/or private owners of land within close proximity of each planned transit station to directly access the station from their proposed development. Collaboration is already underway with the Navy, UH, DHHL, DLNR, HDOT, DAGs, and a variety of private landowners.

HART, in collaboration with the State and City planning offices, recognizes transit oriented development is a tool that can assist in implementing Smart Growth (focus on compact, mixed-use, transit-linked, and walkable communities), and Complete Streets (focus on safe and efficient access for all users while encouraging street connectivity and creation of a comprehensive, integrated, connected network for all modes) in proximity to the HRTP guideway and rail stations. These tools all are consistent with HART's commitment to incorporation of sustainability practices throughout its planning practices.

To assist in the collaboration efforts, the HART BOD has approved the creation of a Transit Oriented Development Stakeholders Advisory Group consisting of representatives from HART, the City, the State and private sector representatives from various organizations and groups. HART will be working to get the Stakeholders Group in place and functioning during FY2014.

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Finally, HART staff will keep track of new TOD programs and opportunities developing at the federal level as a result of the implementation of the new surface transportation law MAP-21 as well as potentially at HUD or thru other federal programs or initiatives.

Procurement Plan

Agency Business Operations

HART will conduct routine procurements for needed services, equipment, and supplies related to support the conduct of agency business operations utilizing City procedures and group discount opportunities.

Project Implementation

The table below lists the HRTP contracting actions that were in process in the 4th quarter of FY2013 and those that will be active during each quarter of FY2014:

Qtr	Section	Type	Status	Description	Ad Date	NTP Date
2013 4Q	PW	DFIM	Active	Elevators & Escalators	8/17/2012	6/15/2013
		Services	Active	Federal Government Liaison	11/30/2012	6/15/2013
	PW	Pro Svcs	Active	Historic Architectural Design Consultant	3/15/2013	6/15/2013
	PW	Pro Svcs	Future	Professional Recruiting Services	4/10/2013	5/30/2013
	PW	Services	Future	OCIP Brokerage Services	12/14/2012	6/29/2013
2014 1Q	City Cen	Design	Active	Dillingham Station Group/Kaka'ako Station Group	11/16/2012	8/15/2013
	PW	Services	Future	On-Call Construction Contractor	3/15/2013	8/27/2013
	PW	Prof Svcs	Future	General Engineering Consultant Re-compete	5/31/2013	9/1/2013
	PW	Art	Future	Art-in-Transit (Call for Artists)	4/30/2013	9/30/2013
2014 2Q	Airport	CE&I	Active	Airport and City Center Utilities CE&I	12/21/2012	10/2/2013
	WOFH/KHG	CE&I	Active	West Oahu / Farrington Highway and Kamehameha Station Groups (includes H2/R2 Ramp)	1/23/2013	12/2/2013
	KHG	Design	Future	Pearl Highlands Parking Structure/Bus Transit Center	4/15/2013	12/21/2013
2014 3Q	Airport	Construction	Future	Airport Section Utilities	11/1/2013	3/5/2014
2014 4Q	Airport	CE&I	Future	Airport and City Center Guideway CE&I	7/5/2013	4/1/2014
	WOFH/KHG	Construction	Future	West Oahu / Farrington Highway and Kamehameha Station Groups Construction	1/15/2014	4/15/2014
	City Cen	Construction	Future	City Center Section Utilities	3/15/2014	6/15/2014

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HART Organizational Development Strategy

Background

Planning and development of the HRTP was the responsibility of DTS for six years. The HRTP was managed through DTS' Rapid Transit Division (RTD). DTS/RTD managed the completion of the required planning, economic, engineering, and environmental studies needed to advance the project through the stages of the FTA's New Starts project development process including: analysis of alternatives; technology and alignment selection; conceptual and preliminary engineering (PE) work; the preparation of a Final Environmental Impact Statement (FEIS); and the development of a contracting strategy for actually constructing the project.

Because of the uncertainty surrounding whether the City would receive the funding and approvals needed to advance the project, the strategy DTS/RTD employed was to maintain a relatively small staff and hire consultants to provide the expertise necessary to perform various aspects of the required work. The City project staff was supplemented by a Program Management Support Consultant (PMC) that has provided experienced and technically proficient personnel to fill key positions and roles in the project organization. PMC provided services have included professional, technical, managerial and other support services to initiate and complete the PE/EIS phase of the project and initiation of final design and construction. PMC personnel have functioned as staff embedded within the DTS/RTD assisting City employees in managing and overseeing the work.

In addition, DTS/RTD retained the services of a General Engineering Consultant (GEC) to undertake the planning, economic, engineering, and environmental work that was required to advance the project through FTA's New Starts process. As part of this effort, the GEC conducted engineering and technical studies, including conceptual engineering, to support the preparation of the EIS, and PE work to support the City's request to advance to final design. The GEC assisted the DTS/RTD with preparing competitive procurement documents for the various DB contracts and the Core Systems DBOM contract.

The project has passed the critical milestone of completing the FEIS and obtaining a Record of Decision (ROD) issued by the U.S. Department of Transportation in accordance with the National Environmental Policy Act (NEPA) and Hawai'i State law. With the issuance of the ROD, FTA provided authority to begin property acquisition and undertake utility relocation work. As noted in the FY2013 Work Program section, DB contracts for initial phases of the project have already been awarded and construction work has started on the initial phases. HART has now begun final design on other elements of the project.

With the start-up of HART on July 1, 2011, RTD ceased to exist and the RTD staff, including the embedded PMC staff, was transitioned to become the core staff of HART. In addition, the GEC continued to perform its scope of work under the auspices of HART.

FTA Requirements

Because the HRTP will be funded in part with Federal dollars through the FTA, HART must demonstrate that it meets FTA requirements for grantees pursuing a major investment project

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like the HRTP. Principal among these requirements is that the grantee must exhibit the "technical capacity and capability to efficiently and effectively" carry out the project. The FTA conducts an assessment of a grantee's technical capacity and capability by looking at a number of things including the following:

- Organizational structure.
- Staff qualifications and experience.
- Roles, responsibilities, and interfaces among key project team members laid out in a responsibility matrix.
- Staffing plan showing labor distribution over the life of a project.
- Copies of various key procurement documents.
- Description of management processes and procedures including the division of decision-making authority between the BOD and management staff; financial and procurement policies and procedures; and community outreach and relations efforts.
- Resumes of project team members.

The above information is embodied in a Project Management Plan (PMP). The PMP is periodically updated as a project moves through the various stages of project development. The current PMP for the HRTP is in the process of being updated for the next project milestone, the FFGA. With each successive update of the PMP, the expectations for the technical capacity and capability of the grantee increases. In other words, the grantee must demonstrate a growing capacity and capability to match the increasing scope, complexity, and magnitude of the work to be performed in the next project phase in order to receive FTA approval to proceed. HART is scheduled to be in position to receive an FFGA in the second quarter of FY2013 assuming everything is in order.

As a result, ensuring that HART will meet the FTA's technical capacity and capability requirements is a major factor in the formulation of the organizational development strategy embodied in the PMP and described herein.

HART Organization

Work on the project is now in the final design phase of FTA's New Starts process. Work continues on property acquisitions and owner/tenant relocations and utility relocation. Limited construction work on DB portions of the project has begun.

The organizational approach embodied in the PMP for the final design and construction phases requires a staff of 139 positions and continues the role of the PMC as providing embedded staff within HART. **Appendix B** contains a series of organizational charts that depict the Authority's functional structure and show the placement of the positions that make up the proposed FY2014 HART staff. Of these positions, 24 or roughly 17% of them are expected to be PMC provided staff.

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The GEC's role has evolved to reflect the start of final design and construction work. The GEC will oversee final design efforts and provide construction management and oversight services including resident engineering, office engineering, and inspection. This includes performing quality assurance inspections of all contractor activities; reviewing all contract document submittals including shop drawings and specifications; reviewing contractor invoices; reviewing requests for information; reviewing requests for change; conducting inspections, value engineering, and reviewing change order estimates. The GEC will provide Construction Engineering and Inspection services for HART's DB contracts.

The PMP calls for retaining the services of engineering design consultants (EDCs) to develop final detailed designs of the remaining project elements that will be procured through open competitive bidding. This does not include the three DB contracts or the Core Systems and Vehicles contract since final design is a function within the scope of those contracts. This does include stations, the Airport and City Center guideway phases and various fixed facilities. Fixed facilities design includes the design of civil and structural facilities, trackwork, utilities, the Pearl Highlands parking structure and access ramps, landscaping and some systemwide elements. The GEC will oversee the final design work of the EDCs. The GEC also continues to provide technical studies and management support for implementation of the Section 106 Programmatic Agreement 2nd Mitigation Support for the ROD.

Future Organizational Development

At present and for the next three to four years, HART is a project development agency with no daily operating or service delivery responsibilities. This, of course, will change as the rail transit project gets completed and actual revenue service begins operating initially in 2017 with full service along the entire alignment starting in 2019. The staffing needs and business systems needs of the agency will evolve over time as the change from project development to operations and service delivery occurs. How well this transformation is accomplished will be important to the success of the agency in accomplishing its Mission and Vision. The strategy for managing this evolution is outlined below:

- Phase out use of PMC and build HART staff capability.
  - Identify those positions that HART will need long term for operations and the planning of extensions and seek to fill these positions with direct hires.
    - Examples: Deputy CEO, Chief Operating Officer, Chief Engineer, Internal Audit, Marketing, Planning, Property Management.
    - Use PMC to temporarily fill these roles when recruitment is unsuccessful or cannot be completed in a timely fashion.
    - PMC employees will mentor and help train HART staff and new hires; this may require some overlapping of positions.
  - Utilize the services of the City's Department of Human Resources for assistance on organizational development including a classification and compensation structure, and recruitment and employee development strategies.
  - Current PMC contract expires in February 2015; the contract may need to be extended for an additional period depending on HART's success in staff recruitment.

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- GEC and EDCs will continue their roles/scope until the project construction, system integration and testing, and start-up work is completed.

- Develop internal business processes and systems that fit the needs of the transit system. Move away from using City processes and systems wherever it makes the most sense for HART to achieve its Mission, Vision, and Goals.

- Develop a seamless multi-modal (bus and rail) transit system.
  - Engage in joint planning with DTS and "TheBus" management (O'ahu Transit Services) for reconfiguration of the bus system to complement rail.
  - Establish a joint bus-rail fare collection system (hardware and software) and a revenue processing set-up to reduce interface problems and achieve economy of scale cost savings.
  - Encourage DTS to update /improve the bus fare collection system prior to the start of rail operations.

- Future issues that will need to be addressed:
  - Programming of bus fare collection system improvements to interface with rail fare collection needs to be pursued in the very near future.
  - The process for setting fares between the HART BOD and City Council will need to be addressed.
  - Operating support from the City for the rapid transit operation will be required as delineated in the Financial Plan.
  - Development of operating policies and rules and the identification of any implications for project design and the operating and capital improvement budget.
  - Pursuing opportunities for concessions and possible joint use of transit facilities and assets to generate income.

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HART Financial Strategy, Plans and Budgets

Financial Overview

HART has prepared a detailed 20-year financial plan in accordance with the requirements of the Federal Transit Administration to receive federal funding for the HRTP. The financial plan provides a summary of the capital costs and funding sources associated with both the HRTP and the City's ongoing operating and capital needs for its existing public transportation system. It also includes a plan to fund the operations and maintenance (O&M) costs associated with the project, TheBus, and Handi-Van services. The current HART Financial Plan was prepared in June 2012 in preparation for receiving the FFGA from the FTA that was executed in December 2012. **Appendix D** contains a summary of revenues and expenses as shown in the approved HART Financial Plan for completing the HRTP and for operating the City's integrated public transportation system over the period covered by the Plan (FY2010 – FY2030).

The financial strategy reflected in the approved HART Financial Plan can be summarized as follows:

- Implementation of the HRTP will be funded primarily by revenues from a one-half percent (0.5%) surcharge on the State's General Excise Tax (GET) and grants from the federal government provided by the Federal Transit Administration. The 0.5% GET tax expires in 2022.
- Short and medium term debt financing will be used to help manage cash flows during construction of the HRTP. However, all such debt will be retired by the time the GET tax expires.
- Ongoing funding for operation of the integrated bus and rail public transportation will be provided through a combination of fare revenues from passengers, City general funds and some Federal Transit Administration grant programs.

FY2014 Operating and Capital Expense Budgets

HART staff prepared and submitted preliminary FY2014 Operating and Capital Budgets to the HART BOD Finance Committee in November 2012. On November 30, 2012, the HART Executive Director/Chief Executive Officer transmitted the proposed FY2014 Budgets to the Mayor and the City Council. This section of the FY2014 Business Plan describes in summary form the Operating and Capital Budgets. City Council requested further detailed information of the HART proposed budget during the spring of 2013, and will include it in the City's budget bills anticipated to be approved on June 6, 2013. The HART Board is scheduled to discuss and adopt the FY14 Operating and Capital budgets by June 30, 2013.The final version of the FY2014 Business Plan will reflect the final FY2014 Operating and Capital Budgets adopted by the HART BOD. The total budget request for FY2014 was as follows:

Operating Budget	$ 20,917,259
Capital Improvements	1,340,438,300
Total FY 2014 Budget Request	$1,361,355,559

Appendix D includes a summary table which provides operating and capital expense historical information for FY2012 (Note: a detailed breakdown of actual costs for all line items is not available) and FY2013 (Projected) as well as the FY2014 Budget described in the sections below.

FY2014 Operating Budget

The HART Operating Budget includes expenses for HART staff and administrative expenses (i.e. office and equipment rent and supplies, legal services, telecommunications and various administrative services). It also includes expenses related to the support HART receives from other City departments as well as a contribution to City overhead expenses. The Operating Budget has three major expense categories as shown in the table below. The table provides a breakdown of these three cost components for FY2014 and a comparison against the budgeted projected actual amounts for FY2013. The FY2013 projected amounts shown in the table are preliminary; there will be adjustments made through August 2013 to record payable amounts.

Expense Category	FY2013 Budget	FY2013 Projected	FY2014 Budget
Personnel	$12,971,682	$ 10,406,533	$13,030,366
Current Expenses	8,081,511	6,370,244	7,880,893
Equipment & Software	16,000	--	6,000
TOTAL	$21,069,193	$16,776,777	$20,917,259

The Personnel category of the FY2014 Operating Budget includes funding for 139 full-time equivalent (FTE) positions, then same level as FY2013. This compares to 136 FTEs authorized in the FY2012 Budget and 110 FTEs in 2011. As described in the Organizational Development Strategy section, the staffing level proposed is designed to ensure that HART has the technical capacity and capability to manage the implementation of the HRTP and meet the requirements of the FTA. The following chart provides a summary breakdown of the number of positions included in the FY2014 staffing plan by major functional category and includes PMC provided positions funded by the Capital Budget. See **Appendix B** for detailed organizational charts.

Functional Category	Positions
Executive Management (CEO, Deputy CEO, Board Administrator, RTSA, EEO & Admin. Support)	8
Project Controls & Change Management	15
Budget & Finance (CFO, Procurement, Grants, Budget, Accounting, Risk Management & Internal Control)	24
Planning, Utilities, Permits & Right-of-Way	29
Engineering & Construction Management	37
Other Professional (Legal, Operations, Safety & Security, Quality & Assurance, Government Relations, & Public Involvement)	23
Administrative Services	9

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The following table provides a breakdown of the reimbursements to other City departments included in the proposed FY2014 Budget:

City Department/Purpose	Amount
Corporation Counsel – Staff Salaries	$ 552,482
Corporation Counsel – Current Expenses	37,500
Design & Construction – Staff Salaries	50,000
Budget & Financial Services – Staff Salaries	61,946
Fringe Benefits Associated with Above Salary Items	284,043
5% Reduction to Salaries and Fringe Benefits	0
CASE – Central Administrative Services Expenditure	996,060
TOTAL	**$ 1,982,031**

FY2014 Capital Budget

The FY2013 Capital Budget is made up primarily of expenses related to the design and construction of the HRTP consistent with the work planned for the year as described in the Work Program section of this Business Plan. The table below provides a summary comparison of the FY2014 planned expenditures by project budget component against the FY2013 budget. The FY2013 projected amounts presented in the table are preliminary; there will be adjustments made through August 2013 to record payable amounts.

Capital Budget Elements	FY2013 Budget	FY2013 Projected	FY2014 Budget
Consultant Services	$ 64,593,540	$ 10,365,120	$19,731,900
Design Services	72,673,230	111,560,542	39,867,500
Programmatic Agreement	100,000		1,950,000
Utility Relocation	17,342,190		134,500,000
Construction, Const. Mgmt. & Insp.	243,966,420	90,187,459	304,466,100
Core Systems & Equipment	55,556,510	32,250,852	425,907,000
Land Acquisition & Relocation	37,353,070	23,777,549	86,570,000
Public Art	0	2,042	1,975,000
Contingency & Recertification	0	0	325,470,800
TOTAL	**$ 491,584,960**	**$268,143,564**	**1,340,438,300**

While the purposes of most of the elements listed in the above table are generally self-explanatory, several are further described below:

- The Consultant Services expense category includes funding for: the Project Management Consultant providing experienced personnel in various specialized and technical areas to augment agency staff ($3.0 million); consultants supporting the agency in the areas of real estate acquisition and relocation ($0.2 million) and owner-controlled insurance program ($0.2 million); and consultant services supporting the Hawaii Department of Transportation (HDOT) in the areas of traffic management, design review, state safety oversight, as well as HDOT labor costs ($1.6 million total).

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- The Design Services line item is for final design services related to various DBB contracts including the station groups for West O‘ahu /Farrington Highway, Airport, and Kaka‘ako; Airport Guideway; City Center Guideway; Quality Audit Expenses; and allocated contingency for the three DB contracts.

- The Programmatic Agreement (PA) category covers funding for the Kako’o (independent PA project manager).

- The Public Art category provides funding for the start-up of the Public Art Program.

- The Contingency & Recertification line item category has been added as a result of the update of the Risk and Contingency Management Plan done in conjunction with the FTA. The line item provides allowances for Contingency drawdowns ($225,470,800) and Contract Recertifications ($100,000,000) during FY2014. Contract Recertifications occur on occasion to help manage cash flow during the fiscal year when invoices need to be paid prior to receiving debt proceeds and do not change the total contract value.

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Appendix A

HART Balanced Scorecard

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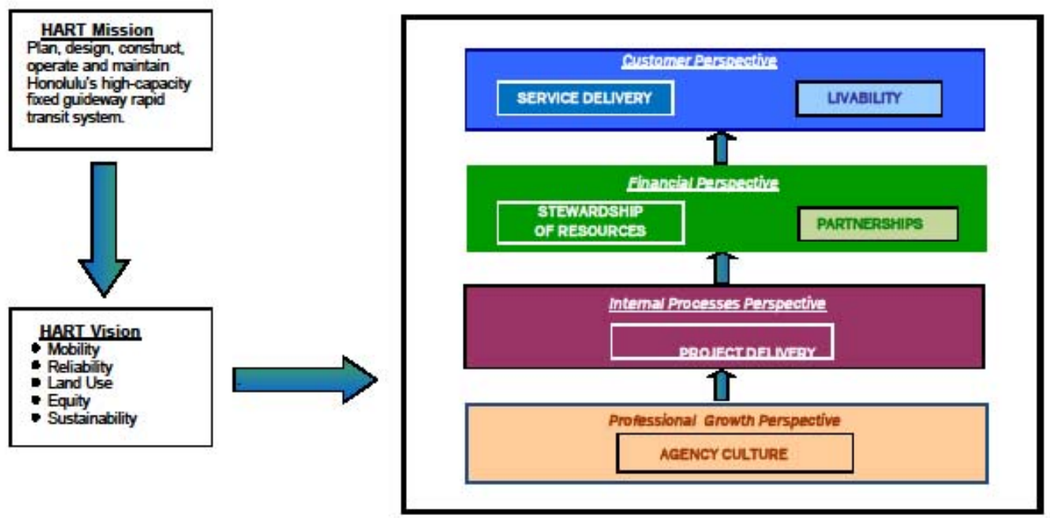
Business Strategy Map



HART
HONOLULU AUTHORITY FOR RAPID TRANSPORTATION

BALANCED SCORECARD

Project Implementation/Pre-Revenue Operation

APPENDIX A
Q3 FY13
Data Date: March 29, 2013

	Goal	Current Quarter (Q3 FY13)				Inception to Date				Comments and Legend
		January, February, March 2013				October 2009 - March 2013				On track or ahead of plan. Immediate attention needed; Requires recovery/resolution. Monitoring. No current target/activity to date; Action pending. Monitoring; Requires special attention. N/A Not Applicable. TBD To be determined.
		Actual	Plan	Variance	Status	Actual	Plan	Variance	Status	
Customer Perspective	**SERVICE DELIVERY**									
	Platform Gates									Submittal anticipated during FY14.
	Fare Collection System									TBD in FY14.
	Bus-Rail Integration Plan									TBD
	HART Operating Organization Plan									TBD
	HART Service Policy/Standards									TBD
	LIVABILITY									
	HART Sustainability Policy									TBD in FY13.
	Transit-Oriented Development (TOD) Policy									TOD stakeholders group in development.
Financial Perspective	**STEWARDSHIP OF RESOURCES**									
	Programmatic Agreement (PA) (Positive = # above or added to Plan; Negative = # remaining)									
	Traditional Cultural Property (TCP) Studies	0	0	-0-		3	4	(1)		# Guideway Sections with TCP studies completed vs. planned. Sections 1-3 completed - State Historic Preservation Division (SHPD) approved TCP studies; Section 4 studies completion expected April 2013, with Consulting Party Review and Consultation in early May (completion of the City Center TCP work is also a condition of the pending federal lawsuit).
	Section I (WOFH) Archaeological Inventory Survey (AIS)	0	0	-0-		92	92	-0-		# trenches completed vs. planned. Section I AIS completed - SHPD accepted AIS Report April 19, 2010.
	Section II (KHG) AIS	0	0	-0-		37	31	+6		# trenches completed vs. planned. Section II AIS completed - SHPD accepted AIS Report on May 23, 2012. Additional trenches were added in collaboration with SHPD to provide additional data at those locations.
	Section III (Airport) AIS	0	0	-0-		47	40	+7		# trenches completed vs. planned. Sections III completed - AIS Report in SHPD Review starting March 4, 2013. Comments returned March 29, 2013. Revision in progress. Additional trenches were added in collaboration with SHPD to provide additional data at those locations. *These figures represent an adjustment to numbers previously reported.*
	Section IV (City Center) AIS	18	18	-0-		250	232	+18		# trenches completed vs. planned. Section IV completed - AIS Report submitted to HART April 1, 2013. On April 8, 2013, HART submitted the report to SHPD for review. 18 additional trenches beyond the original plan were added in January in collaboration with SHPD to provide additional data at those locations. *These figures represent an adjustment to numbers previously reported.*
	Overall AIS Completion (#)	----	----	N/A		426	395	+31		# trenches completed vs. planned.
	Overall AIS Completion (%)	----	----	N/A		108%	----	N/A		% trenches completed vs. planned.
	'Iwi kūpuna finds (bone fragments or full burials) only	2	----	N/A		7	----	N/A		# 'Iwi kūpuna finds. A total of 7 finds have been identified through January 2013. None have been found since. These finds are only associated with the AIS work for the project. Additional finds are possible during utilities relocation and construction. There are 5 finds of human skeletal fragments and 2 human burials. No determinations have been made on the status of any of these finds as burials by SHPD or OIBC at this time. Consultation is in progress with cultural and lineal descendants and these agencies.
	Operating Budget (Negative = below Plan)									
	Operating Expenditures	3.8	5.3	(1.5)		40	55	(15.0)		$M in Q3 FY13 Expenditures/Encumbrances vs. Inception to Date Operating Budget. For Current Quarter monitoring purposes: $21M Total Budget/4 quarters = $5.3M. *Current information includes Inception to Date figures.*
	Staffing Level	4	6	(2)		126	137	(11.0)		# Current HART Full-Time Equivalents (FTEs) vs. planned positions in the FY13 Operating Budget. 126 current FTEs
	Capital Budget (Negative = below Plan)									
	Capital Expenditures/Encumbrances	$56	$92	(36)		$578	$642	N/A		$M in Q3 FY13 Expenditures/Encumbrances in Current Quarter vs. Total Inception to Date Capital Budget of $642M. HART is monitoring the capital expenditures each quarter. The capital expenditures are less than planned due to the litigation causing delays. *Current information includes the Inception to Date figures.*

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	Goal	Current Quarter (Q3 FY13)				Inception to Date				Comments and Legend
		January, February, March 2013				October 2009 - March 2013				On track or ahead of plan. Immediate attention needed; Requires recovery/resolution. Monitoring. No current target/activity to date; Action pending. Monitoring; Requires special attention. N/A Not Applicable. TBD To be determined.
		Actual	Plan	Variance	Status	Actual	Plan	Variance	Status	
Financial Perspective (Continued)	**Revenues** (Negative = below Plan)									
	Net GET Surcharge Receipts	$42	$51	(9)		$596	$633	($38)		* $974M = Actual Net GET Surcharge received since inception of the surcharge on 1/1/07 * $M Net GET Surcharge Cash Receipts vs. projected FYs 2010-2013 revenue in FFGA Financial Plan Table A-1, Capital Plan Cash Flows. Receipt amounts exclude Starting Cash Balance of $298M. * $3,291M = Total Net GET Surcharge revenue forecast for FYs 2010-2023 * $51M = Forecast quarterly amount on a cash basis through March 2013 = one-fourth of the $203M FY 2013 amount * Project Inception-to-Date (10/2009 to 3/2013) $633M = Forecast amount through March 2013 (on a cash basis) The status for the Current Quarter and the Inception to Date has changed from yellow to orange.
	Federal Grant Funds (New Starts)	$68	$65	+3		$132	$314	($182)		The variance indicates the available amount of funds. HART has not yet applied for these funds and will apply for them in early FY2014. * FTA New Starts receipts vs. projected FYs 2010-2013 per Table A-1 of the FFGA Financial Plan. * $1,550M = Total §5309 New Starts funds; The first increment under the FFGA is $255M. * $65M = Forecast quarter amount = one-fourth of the $258M FY 2013 amount * Project Inception-to-Date (10/2009 to 3/2013) $314M = Forecast amount = three-fourths of $258M (FY 2013 forecast amount) plus amounts for FYs 2011 ($21M) & 2012 ($99M).
	Federal Grant Funds (ARRA)	----	----	N/A		$4	$4	$0		$214M FTA funds = $210M §5307 + $4M ARRA (American Recovery and Reinvestment Act). No §5307 funds are planned to be used in FY 2013. This source of funding has been completed.
	PARTNERSHIPS									
	Total Stations with Approved Transit-Oriented Development Plans (as shown below)	0	2	N/A		0	21	N/A		TOD plans are being created for 21 stations.
	City Department of Planning and Permitting Transit-Oriented Development Plans	0	2	N/A		0	19	N/A		City Department of Planning and Permitting (DPP) has responsibility for TOD plans for 19 of the 21 stations. A total of 13 stations have final draft TOD neighborhood plans at this time.
	Hawaii Community Development Authority Transit-Oriented Development Plans	0	0	N/A		0	2	N/A		Two additional stations are in HCDA and not part of the DPP planning.
Internal Processes Perspective	**PROJECT DELIVERY - OVERALL**									
	Project Budget									
	FFGA Baseline Project Budget	----	----	N/A		$5,122	$5,122			$M FFGA Baseline Project Budget (including contingencies and FTA-eligible finance charges), in accordance with FTA New Starts project guidelines.
	Committed ($)	$34	----	----		$2,260	$4,251	(1,991)		$M Total Committed (awarded Contract Values + approved Change Orders) this quarter and to date vs. the current Total FTA Project Budget, excluding remaining contingencies and finance charges. The contract awards have been shifted to future years due to AIS delays and the repackaging of contracts.
	Committed (%)	1.5%	----	----		53.2%	----	N/A		% $M Committed of the committed Baseline FFGA Project Budget.
	Incurred ($M)	$63	----	----		$656	$4,251	(3,595)		$M Incurred (Expenditures + approved Requests for Payment) this quarter and to date vs. the current Total FTA Project Budget, excluding remaining contingencies and finance charges. The plan is based on the original program cost curve issued in 2009 and will be re-baselined in September 2013 once construction resumes.
	Incurred (%)	1%	----	----		15%	----	----		% $M Incurred (Expenditures + approved Requests for Payment) of the current Total FTA Project Budget, excluding remaining contingencies and finance charges.
	Estimate at Completion (EAC)	----	----	----		$5,122	$5,122			$M current vs. planned Estimate at Completion (EAC = contract values as budgeted or awarded + executed change orders + pending and potential changes).

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		January, February, March 2013				October 2009 - March 2013				On track or ahead of plan. Immediate attention needed; Requires recovery/resolution. Monitoring. No current target/activity to date; Action pending. Monitoring; Requires special attention. N/A Not Applicable. TBD To be determined.
		Actual	Plan	Variance	Status	Actual	Plan	Variance	Status	
Internal Processes Perspective (Continued)	**Project Progress** [Positive = ahead of Late Plan; Negative = behind Late Plan]									
	Overall Project Progress	1.3%	2.2%	(0.9%)		11.9%	13.2%	(1.3%)		% Complete of Final Design and Construction contracts (FD, DBB-DBOM design levels of effort and DB, DBB, DBOM and E/E construction) actual vs. late plan.
	Overall Design Progress	4.3%	2.1%	+2.2%		42.0%	36.8%	+5.2%		% Complete of Final Design contracts & DB-DBOM design levels-of-effort actual vs. late plan. During the partial temporary suspension of work on ground-disturbing activities, HART is proceeding with final design and engineering activities on awarded contracts to position the project to continue construction once the suspension is lifted following AIS completion. Design is progressing satisfactorily in support of the planned bid dates. The status for the Current Quarter and the Inception to Date has changed from yellow to green.
	Overall Construction Progress	1.9%	3.1%	(1.2%)		7.8%	10.1%	(2.3%)		% Completion of Construction (DB, DBB, DBOM & E/E) contracts vs. planned. On 8/24, HART issued a partial temporary suspension of work for all ground-disturbing activities. HART is evaluating the cost (including equipment, overhead and personnel costs) and schedule impacts of the work suspension with Design-Build Contractor Kiewit Infrastructure West Co. (KIWC) to develop and implement mitigation strategies. KIWC has released field personnel and reassigned staff to other projects.
	Contingency									
	Cost Contingency	$644	$644	-0-		$644	$644	-0-		$M Total Project Cost Contingency vs. the FFGA Baseline Total Project Contingency Budget.
	Schedule Contingency	20	20	-0-		20	20	-0-		# Months Total Buffer Float used vs. planned in the Draft FFGA Risk and Contingency Management Plan [RCMP], June 2012 (Table 6-2).
	PROJECT DELIVERY - SPECIFICS									
	Contracting - Construction (DB, DBOM and Elevators/Escalators) [Negative = below plan/budget]									
	Contracts Awarded	0	0	N/A		4	4	0		# Contracts awarded vs. planned. Elevator/Escalator (E/E) contract award is expected in Q4 FY13.
	Committed (Contract Values + Executed Changes)	2%	---	N/A		96%	100%	(4%)		% $M Committed ($1,703 M) of baseline budget ($1,771 M) not including contingencies. (Due to increased committed amount)
	Contracts Completed	0	0	N/A		0	0	-0-		# Contracts completed vs. planned.
	Contracting - Construction (DBB) [Negative = below plan/budget]									
	Contracts Awarded	0	0	N/A		0	0	-0-		# Contracts awarded vs. planned. The first of 8 planned DBB construction contracts is scheduled to be awarded in Q2 FY14. (Re-packaged; reduce to 8 from 11.)
	Committed (Contract Values + Executed Changes)	---	---	N/A		0%	0%	-0-		% $M Committed ($0 M) vs. baseline budget ($1,237 M) not including contingencies.
	Contracts Completed	0	0	N/A		0	0	-0-		# Contracts completed vs. planned.
	Contracting - Final Design Consultants [Negative = below plan/budget]									
	Contracts Awarded	0	0	N/A		6	6	-0-		# Contracts awarded vs. planned. The seventh of 9 planned Final Design contracts is scheduled to be awarded by Q1 FY14. (Re-packaged; reduce to 9 from 10.)
	Committed (Contract Values + Executed Changes)		---	N/A		73%	100%	(27%)		% $M Committed ($118M) vs. baseline budget ($162M) not including contingencies. *Excluded changes in the numbers were reviewed and the current percentage complete reflects the current project status.*
	Contracts Completed	0	0	N/A		0	0	N/A		# Contracts completed vs. planned.
	Contracting - Other Consultants [Negative = below plan/budget]									
	Contracts Awarded	0	0	-0-		12	12	-0-		# Contracts for Consultant Services other than for final design, construction or insurance awarded this quarter and to date vs. planned, including: 6 for Construction Engineering and Inspection Services, 4 for Project Management (2 Program Management Oversight Consultant + 2 General Engineering Consultant), 4 for Specialty Consulting (Real Estate, Kako'o, Owner-Controlled Insurance Program [OCIP] and LEED MSF Commissioning Consultants), 4 for HDOT Consultant Services and 2 for On-Call for Construction and HazMat Removal consulting. The first CE&I contract will not be awarded until Sept 2013. (Re-packaged; reduce to 20 from 23.) *The Inception to Date numbers were updated to reflect the current contract mix.*
	Committed (Contract Values + Executed Changes)	---	---	N/A		58%	100%	(42%)		% $M Committed ($333M) vs. baseline budget ($573M). Due to the construction delay, the contract amounts awarded are less than expected. Once construction resumes, the amount committed will increase. *The numbers were reviewed and the current percentage complete reflects the current project status.*
	Contracts Completed	0	0	-0-		2	2	-0-		# Contracts completed vs. planned. PMSC-1 and GEC-1 have been completed and are being closed out.

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APPENDIX A
Q3 FY13
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		Actual	Plan	Variance	Status	Actual	Plan	Variance	Status	
Internal Processes Perspective (Continued)	**Change Orders and Claims**									
	Change Orders (#)	13	----	N/A		61	----	N/A		# Change Orders executed this quarter (10 Construction, 1 Final Design, 1 UTIL, 1 Specialty Consultant) These change orders are reducing our unallocated contingency.
	Change Orders ($)	$79.7	----	N/A		$161.2	----	N/A		$M Change Orders executed this quarter ($25.1M Construction, $.6M Specialty Consultant, $.2M UTIL and others) These change orders reflect the Notice to Proceed and AIS delays.
	Claims Filed	0	0	N/A		0	0	N/A		# Claims filed vs. anticipated.
	Claims Resolved	0	0	N/A		0	0	N/A		# Claims resolved vs. filed.
	Utility & HDOT Agreements [Negative = # remaining]									
	Utility Agreements	2	----	N/A		27	29	(2)		# Utility Agreements completed vs. required. The Interim Bridging Agreement for Airport was executed in February and the City Center Interim Bridging Agreement was executed in March. HART needs to sign a utility agreement for the City Center and Airport. HART is internally reviewing the two remaining agreements. Completion of 29 agreements by the end of Q3 FY13 is planned. *The numbers were reviewed and the current figures reflect the current project status. Numbers for the calendar year were utilized earlier, and fiscal year numbers are now utilized.*
	HART-HDOT Agreements	----	----	N/A		2	8	(6)		# HDOT Agreements completed vs. required. Of the 4 Master Agreements required, 1 (WOFH) has been completed. Of the 4 Joint Use and Occupancy (JU&O) Agreements required, 1 (WOFH) has been completed. The KHG Master and JU&O Agreements remain to be executed, pending meeting with HDOT & HART Attorneys, and possibly elevating subject matter between Mayor and Governor.
	Real Estate/Right-of-Way (ROW) [Negative = # remaining]									
	Full Acquisitions	0	0	0		21	38	(17)		# Properties fully acquired ready for construction this quarter and to date vs. planned. Due to acquisition difficulties in securing the Lee property in the WOFH section, the final design is impacted. One property remaining in the Kamehameha section is in escrow. One full take is in escrow and 3 remaining full takes are in negotiations at the Airport section. The remaining City Center full takes are on hold due to the federal court case. The status for the Current Quarter changed from green to yellow.
	Expenditures for Full Acquisitions	$0	$0	$0		$36	$37	($1)		$M in expenditures recorded for full acquisitions vs. planned in the FFGA Budget.
	Partial Acquisitions	0	0	0		7	133	(126)		# Properties partially acquired ready for construction this quarter and to date vs. planned. Most of the partial acquisitions are located in the City Center section and are on hold pending resolution in the federal court case.
	Safety [lower Actual = favorable vs. Hawaii standard]									
	Performance against Standard	0	0	0		0.2	4.3	----		Incidence rate of Recordable Injuries and Illnesses vs. the Hawaii 2010 Total Recordable Incidence Rate (TRIR). Federal regulations define the Incidence Rate as the # of recordable injuries and illnesses occurring amongst a given # of full-time workers (usually 100) over a given period of time (usually 1 year). A Recordable Incident is a work-related injury or illness that results in: death, loss of consciousness, days away from work, restricted work activity or job transfer, or medical treatment beyond first aid. (29 CFR 1904).
	OSHA Recordable Injuries	0	0	0		4	0	----		# Occupational Safety and Health Agency (OSHA) Recordable Injuries to date.
	OSHA Violations	0	0	0		0	0	----		# OSHA violations to date.
	Safety Certification Checklists	----	----	N/A		----	----	----		# Safety Certification Checklists completed vs. planned.
	Quality Assurance (QA)									
	QA Audits	3	3	-0-		15	15	-0-		# QA Audits of HART, GEC, contractors and suppliers completed vs. planned.
	Design NCRs	7	7	0		20	21	(1)		# Design Non-Conformance Reports (NCRs) closed vs. issued.
	Construction NCRs	----	----	N/A		----	----	N/A		# Construction NCRs closed vs. issued.

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		Actual	Plan	Variance	Status	Actual	Plan	Variance	Status	
Internal Processes Perspective (Continued)	**Economic Multipliers** [Negative = below plan]									
	DBE Participation	0.014%	13%	-12.986%		0.35%	13%	-12.65%		Actual vs. target participation rate of Disadvantaged Business Enterprises (DBE). The planned DBE participation rate is an overall project goal. *The rate has been adjusted to more accurately reflect performance to date.*
	Direct Jobs Created	----	----	----		----	----	----		# Direct jobs created. Projections and criteria to be developed.
	Public Outreach									
	Neighborhood Board Meetings	24	----	N/A		742	----	N/A		# Neighborhood Board Meetings in which HART has participated to date.
	Presentations/ Events	29	----	N/A		1,393	----	N/A		# Events in which HART has participated to date.
Professional Growth Perspective	**AGENCY CULTURE**									
	Staff Training and Career Development Program									
	Training Opportunities									# Training opportunities provided to HART staff vs. planned. Annual Training Plan to be developed.
	Employees Trained									# HART Employees (including PMSC) who have received professional training. Objective to be established.
	Internal Promotions									
	Internally-Filled Positions	2	0	+2		4	0	+4		% of positions filled that have been filled internally. Objective to be established.
	PMSC/GEC Phase-Out									
	Positions Transitioned to HART	0	0	-0-		3	0	+3		# Positions transitioned from PMSC to HART vs. planned in the HART Business Plan. TBD.
	Employee Satisfaction									
	Surveys	0	0	N/A		0	0	N/A		# Employee surveys conducted to date vs. planned. Plan to be developed.

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Appendix B

HART Organizational Charts

DRAFT

Prepared by:

Administrative Specialist — Date: 4/2/2013

Concur:

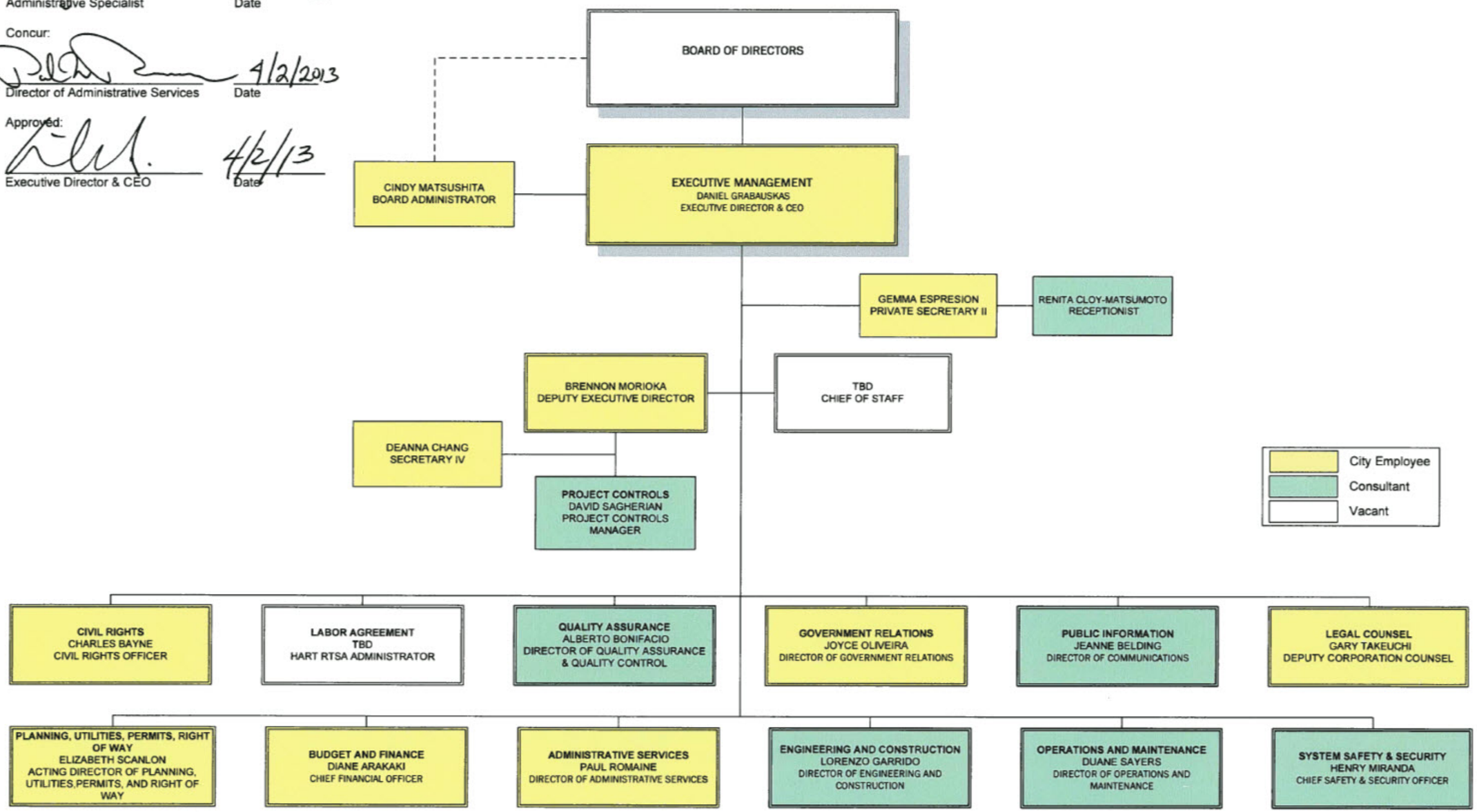
Director of Administrative Services — Date: 4/2/2013

Approved:

Executive Director & CEO — Date: 4/2/13

HONOLULU AUTHORITY FOR RAPID TRANSPORTATION

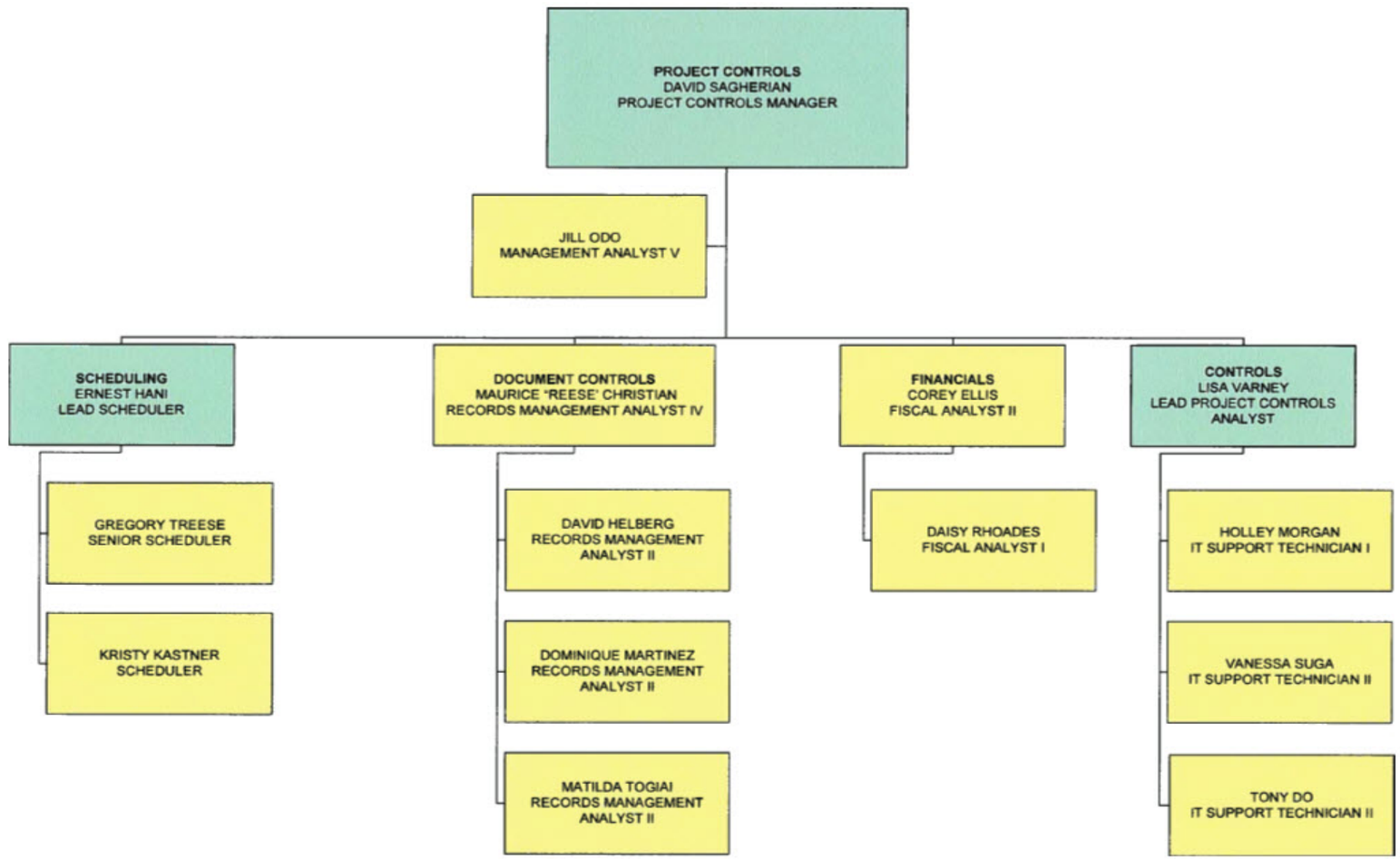
APRIL 2, 2013



1

HONOLULU AUTHORITY FOR RAPID TRANSPORTATION
PROJECT MANAGEMENT

APRIL 2, 2013



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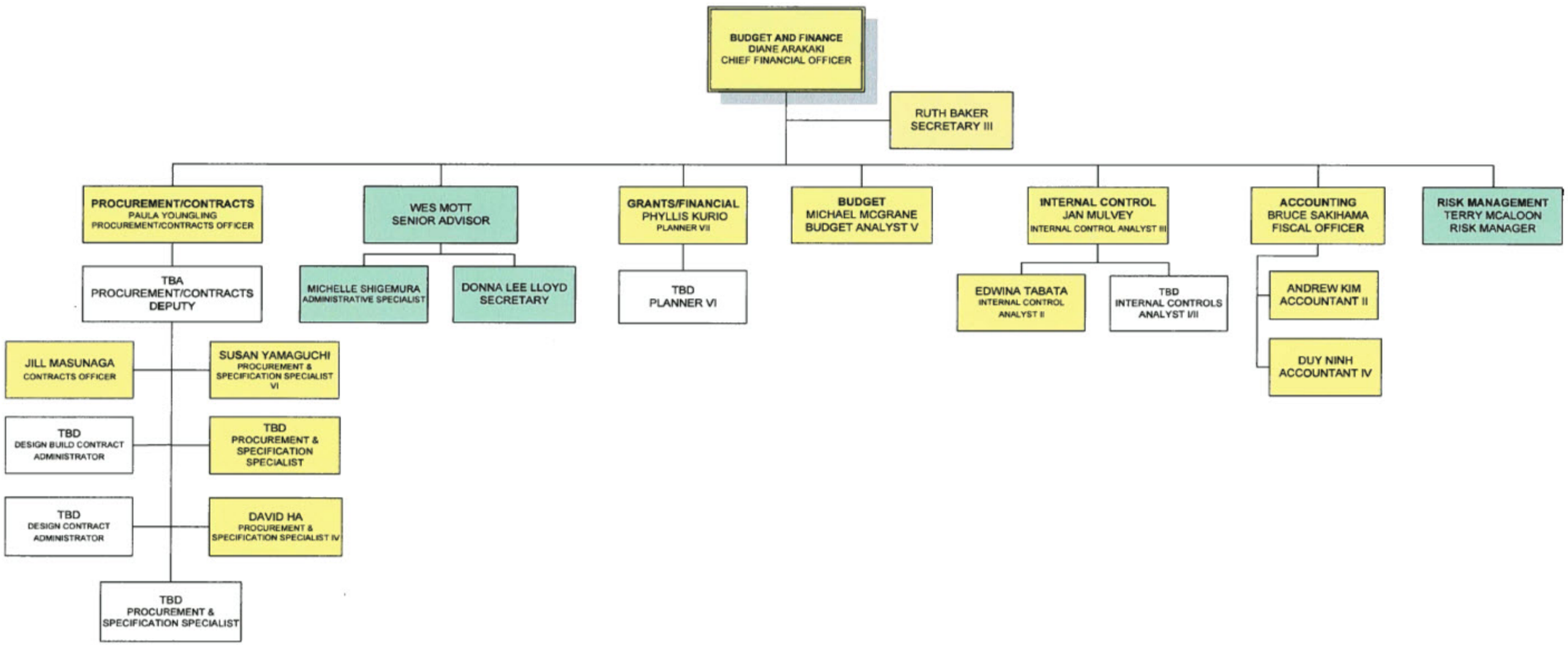
HONOLULU AUTHORITY FOR RAPID TRANSPORTATION
BUDGET AND FINANCE

APRIL 2, 2013

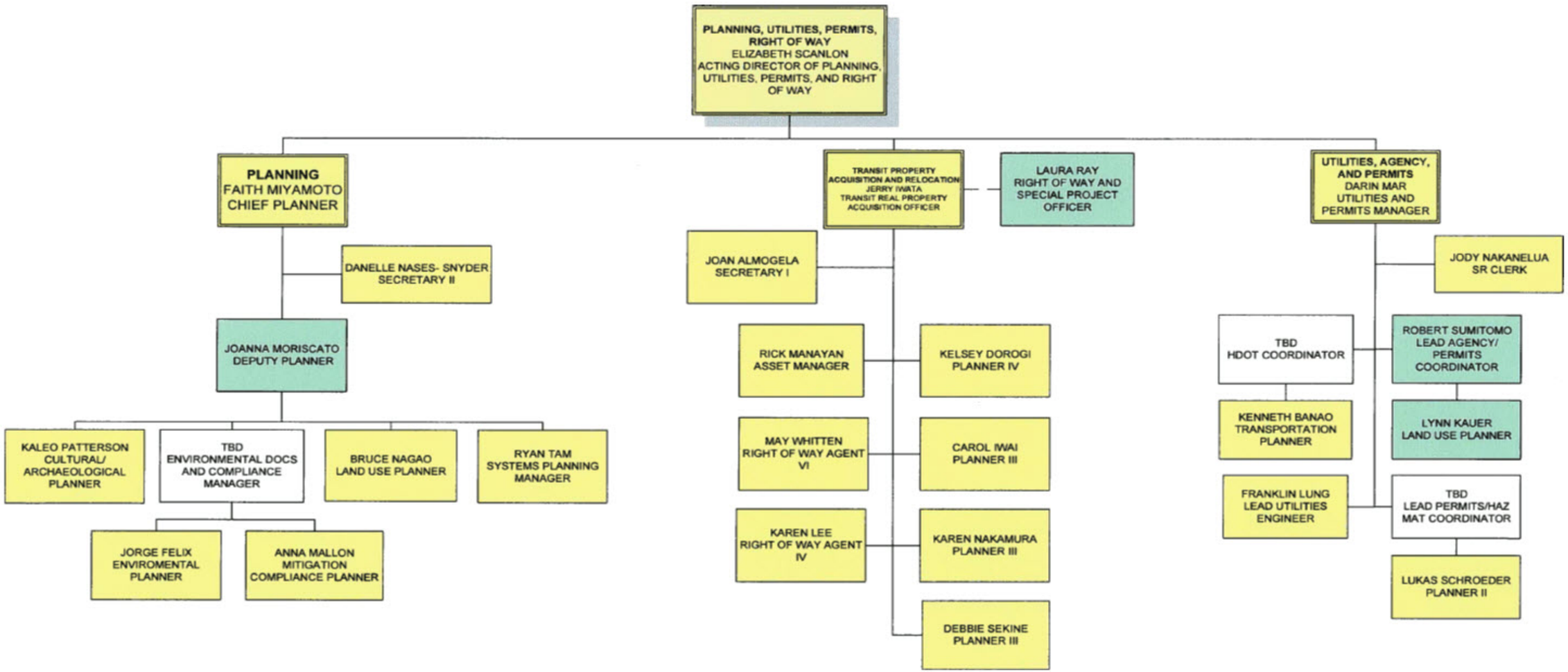


3

HONOLULU AUTHORITY FOR RAPID TRANSPORTATION

PLANNING, UTILITIES, PERMITS, RIGHT OF WAY

APRIL 2, 2013



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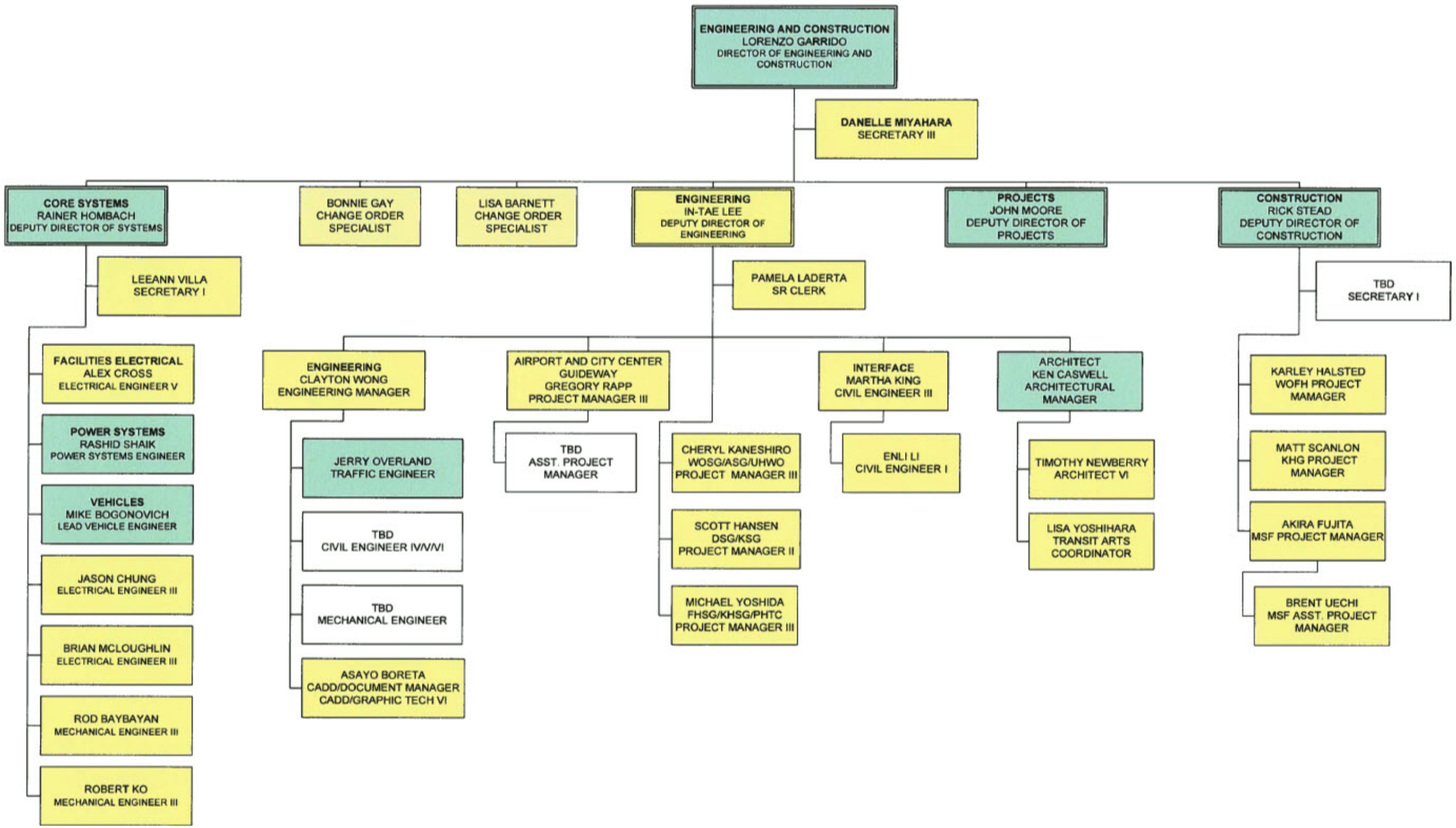
HONOLULU AUTHORITY FOR RAPID TRANSPORTATION
ENGINEERING AND CONSTRUCTION

APRIL 2, 2013



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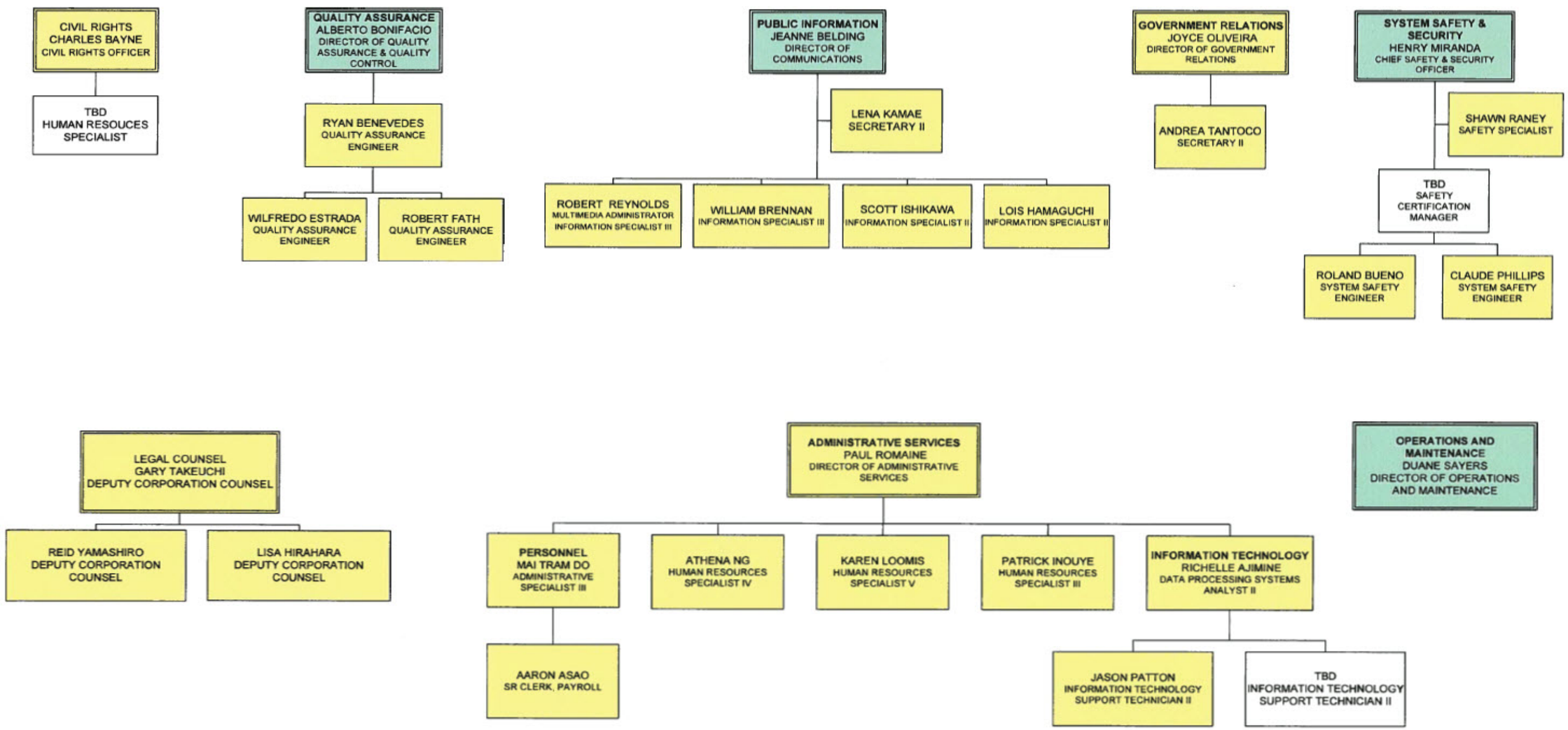
HONOLULU AUTHORITY FOR RAPID TRANSPORTATION

CIVIL RIGHTS, QUALITY ASSURANCE, PUBLIC INFORMATION, GOVERNMENT RELATIONS, SYSTEM SAFETY & SECURITY, LEGAL COUNSEL, ADMINISTRATIVE SERVICES, AND OPERATIONS AND MAINTENANCE

APRIL 2, 2013



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Appendix C

Project Background and Planning

The Alternatives Analysis (AA) for the project was initiated in August 2005 and the *Honolulu High-Capacity Transit Corridor Project Alternatives Analysis Report* was presented to the Honolulu City Council in November 2006. The purpose of the report was to provide the City Council with the information necessary to select a mode and general alignment for high-capacity transit service on O‘ahu. The report summarized the results of the AA that was conducted following the FTA’s planning guidance. It also provided information on the costs, benefits, and impacts of four alternatives: No Build Alternative, Transportation System Management Alternative, Managed Lane Alternative, and Fixed Guideway Alternative.

During November and December 2006, public meetings were held on the AA. On December 22, 2006, the Honolulu City Council enacted Ordinance No. 07-001, which selected a fixed guideway alternative from Kapolei to the University of Hawai‘i at Mānoa with a connection to Waikīkī as the Locally Preferred Alternative (LPA) for the project. Ordinance 07-001 identified a specific alignment for the majority of the corridor but left options open in two locations. At the western end of the corridor, the LPA selection identified two alignments (described in the AA Report as Section I – Saratoga Avenue/North-South Road and Kamokila Boulevard/Farrington Highway), with the notation *“as determined by the city administration before or during preliminary engineering.”* In the center of the corridor, the LPA selection also identified two alignments (described in the AA Report as Section III – Salt Lake Boulevard and Aolele Street), also with the notation *“as determined by the city administration before or during preliminary engineering.”*

The LPA selection was made recognizing that the then-identified revenue sources, including revenues from the 0.5 percent county GET surcharge in place from January 1, 2007, through December 31, 2022, and a reasonable expectation of FTA New Starts funds, would not be sufficient to fund the capital cost of the LPA. Thus, a financially feasible project needed to be identified. On February 27, 2007, the Honolulu City Council initially selected a segment of the LPA from East Kapolei to Ala Moana Center, via Salt Lake Boulevard (Resolution 07-039, FD1(c)). However, on January 28, 2009, the Honolulu City Council, under Resolution 08-261, recommended replacing the Salt Lake portion of this initial alignment with a route that includes direct service to Pearl Harbor and the Airport. This section of the LPA, from East Kapolei to Ala Moana Center, which serves the Airport is referred to as “the project” and is shown in **Figure 1** and described in Project Description, both following.

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Figure 1: The Project

Project Description

Alignment

The project is an approximately 20-mile portion of the LPA extending from East Kapolei in the west to Ala Moana Center in the east (**Figure 1**). The alignment is elevated, with the exception of 3,175 linear feet (0.6 mile) that is at-grade near the Leeward Community College Station.

The project is planned to be delivered in four design and construction sections, as described below.

Section I – West O‘ahu /Farrington Highway: East Kapolei to Pearl Highlands

East Kapolei is the western terminus of the project. The alignment begins at Kualaka‘i Parkway (North-South Road) north of Kapolei Parkway. The alignment follows Kualaka‘i Parkway in a northerly direction to the entrance to UH West O‘ahu where it turns east and continues south of Farrington Highway and then onto Farrington Highway and crosses Fort Weaver Road. The alignment is elevated along this length.

The alignment continues in a north-easterly direction following Farrington Highway in an elevated structure. Alongside Waipahu High School, the alignment descends to grade as it enters the Maintenance & Storage Facility (the former Navy Drum site). The alignment continues at grade to Leeward Community College and then returns to an elevated configuration to cross the H-1 Freeway. North of the Freeway, the alignment turns eastward along Kamehameha Highway.

Table 1: Section I Stations – East Kapolei to Pearl Highlands

Station No.	Name/Planned Location	Planned Station Type	Planned Station Features
1.	**East Kapolei:** Kualaka‘i Parkway @ East –West Road	Center Platform Concourse	Park-and-Ride lot: 900 spaces
2.	**UH West O‘ahu :** Kualaka‘i Parkway @ Campus Drive	Side Platform Concourse	Park-and- Ride lot: 1,000 spaces Major bus interface
3.	**Ho‘opili:** Future minor east-west street approximately 300’ south of Farrington Highway	Side Platform No concourse	
4.	**West Loch:** Farrington Highway @ Leoku Street	Side Platform Concourse	Major bus interface with Bus Transit Center
5.	**Waipahu Transit Center:** Farrington Highway @ Mokuola Street	Side Platform Concourse	Major bus interface with Bus Transit Center
6.	**Leeward Community College:** Leeward CC parking lot	Center Platform At grade	Community college interface Access from below platform circulation space

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Section II – Kamehameha Highway: Pearl Highlands to Aloha Stadium (Airport)

The alignment continues in an elevated structure and continues in the median of Kamehameha Highway, crossing H-1 and continuing to where the Moanalua Freeway extension joins Kamehameha Highway at Aiea Stream. The route then crosses the westbound lane of Kamehameha Highway past a section with a pocket track and continues to the Aloha Stadium Station. Section II includes three stations: Pearl Highlands, Pearlridge, and Aloha Stadium, and two park-and-ride lots.

Table 2: Section II Stations – Pearl Highlands to Aloha Stadium

Station No.	Name/Planned Location	Planned Station Type	Planned Station Features
7.	**Pearl Highlands:** Kamehameha Highway @ Kuala Street	Side Platform Concourse	Park-and-Ride multi-level structure: 1,600 spaces Major bus interface
8.	**Pearlridge:** Kamehameha Highway @ Kaonohi Street	Side Platform Concourse	Major bus interface to be provided in the future as a separate project when funds become available
9.	**Aloha Stadium:** Kamehameha Highway @ Salt Lake Boulevard	Side Platform No Concourse	Major bus interface Park-and-Ride lot: 600 spaces

Section III – Airport: Aloha Stadium to Middle Street Transit Center Station

Past Aloha Stadium Station, the elevated route reenters the median of Kamehameha Highway continuing to its intersection with Nimitz Highway. The route then runs along Nimitz Highway turning *makai* into Aolele Street. The route then follows Aolele Street (Koko Head) transitioning to Ualena Street and Waiwai Loop to reconnect to Nimitz Highway along the *makai* frontage road and continues to the Middle Street Transit Center, after crossing Nimitz Highway. Section III includes four stations: Pearl Harbor Naval Base, Honolulu International Airport, Lagoon Drive, and Middle Street Transit Center.

Table 3: Section III Stations – Airport

Station No.	Name/Planned Location	Planned Station Type	Planned Station Features
10.	**Pearl Harbor Naval Base:** Kamehameha Highway @ Radford Drive	Side Platform Concourse	
11.	**Honolulu International Airport:** Aolele Street @ Ala ‘Auana Street	Side Platform No Concourse	Pedestrian walkways to Airport Terminal
12.	**Lagoon Drive:** Ualena Street @ Lagoon Drive	Side Platform No concourse	Two entrances
13.	**Middle Street Transit Center:** Dillingham Boulevard @ Middle Street	Side Platform Concourse	Major bus interface with Bus Transit Center Pedestrian Bridge to Transit Center

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Section IV – City Center: Middle Street Transit Center Station to Ala Moana Center

The elevated alignment continues southeast following Dillingham Boulevard and crosses Kapālama Canal, leaving Dillingham Boulevard at Ka‘aahi Street, and crosses Iwilei Road. After crossing Iwilei Road, the alignment follows Nimitz Highway to Halekauwila Street and continues southeast along Halekauwila Street past Ward Avenue, where it transitions onto Queen Street. At the end of Queen Street, the alignment crosses Waimanu Street and crosses over to Kona Street. The alignment then goes into Ala Moana Center and ends with a tail track along Kona Street.

Section IV includes eight stations: Kalihi, Kapālama, Iwilei, Chinatown, Downtown, Civic Center, Kaka‘ako, and Ala Moana Center. There are no park-and-ride lots planned in this section.

Table 4: Section IV Stations – City Center

Station No.	Name/Planned Location	Planned Station Type	Planned Station Features
14.	**Kalihi:** Dillingham Boulevard @ Mokauea Street	Side Platform Concourse	Two entrances
15.	**Kapālama:** Dillingham Boulevard @ Kokea Street	Side Platform No concourse	Two entrances
16.	**Iwilei:** Ka‘aahi Street @ Dillingham Boulevard	Side Platform Concourse	
17.	**Chinatown:** Nimitz Highway @ Kekaulike Street	Side Platform Concourse	
18.	**Downtown:** Nimitz Highway @ Alakea Street	Side Platform Concourse	Two entrances
19.	**Civic Center:** Halekauwila Street @ South Street	Side Platform No Concourse	Two entrances
20.	**Kaka`ako:** Halekauwila Street @ Ward Avenue	Side Platform No Concourse	
21.	**Ala Moana Center:** Kona Street *mauka* of shopping center	Center/Side Platform Adjacent to shopping center	Major bus interface

System-wide Elements

The selected transit technology is electrically powered, industry-standard steel wheel on steel rail powered from a third-rail system. The selected vehicle is to be capable of a top speed greater than 50 mph. The vehicles will be fully automated and driverless although train attendants are anticipated to be on the train during an initial burn-in period to provide the possibility of manual intervention in response to malfunctions. The driverless option is possible because the fixed guideway will operate in exclusive right-of-way with no automobile or pedestrian crossings. The system is being designed so that vehicles from more than one supplier could operate on the guideway once they are integrated with the train control system. To this degree, it is intended to be a non-proprietary system.

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The traction power distribution system consists of about 14 substations and main line track power distribution facilities. The substations are spaced at approximately one and one-half mile intervals along the alignment. The exact number of substations will be determined during final design.

Train signaling uses automatic train control and automatic train operations technology. The communications and security facilities include emergency phones, closed-circuit television, and public address and information display systems.

There will be 80 guideway vehicles to accommodate 6,280 passengers per hour per direction in the initial years of operations. Additional vehicles will be added to the fleet as passenger demands require in the future.

The Maintenance & Storage Facility will be constructed on 43 acres of land at the former Navy Drum site, *makai* of Farrington Highway to the west of Leeward Community College, to service and store the transit vehicles. Up to 150 vehicles may be accommodated at the Maintenance & Storage Facility.

Fare Collection

A unified fare structure is planned, which will be integrated with the City's existing bus system, TheBus. The HRTP was originally contemplated to have a barrier-free, proof-of-payment fare collection system utilizing fare vending machines in all stations and fare inspectors riding the system to verify proof of fare payment. This type of fare collection system is less capital intensive to implement but is more costly to operate over the long term. New at-grade light rail systems typically utilize proof-of-payment fare collection systems to reduce the cost of building the light rail line. An alternative would be to utilize a traditional barrier fare collection system with fare gates that require payment to enter the rail station. This type of system is feasible for the HRTP since all rail stations will be elevated with controlled access. Fare gate systems cost more to initially install but are less expensive to operate long term. They also reduce the potential for fare evasion by train users and provide information on travel and usage patterns which will help with planning service levels and bus-rail connections. Currently, HRTP stations are also being designed so that fare gates may be installed in the future with little or no disruption. HART will be studying fare collection systems in conjunction with the development of a Fare Policy for the rail line. A final decision by the HART BOD on which type of fare collection system to use is expected to be made in FY2014.

Operating Plan

The Project is planned to operate in revenue service seven days a week. Weekday service will operate between 4 a.m. and midnight. Saturday service will run from 5 a.m. to midnight, and Sunday service will run from 6 a.m. to midnight. Vehicle headways in each direction will range from 3 minutes during peak periods to 10 minutes from 8 p.m. to midnight. A train will arrive in each direction at the station every 6 minutes during base periods. The system is planned to operate with multi-car vehicles at a maximum train length of 240 feet with each train able to carry a minimum of 300 passengers. The

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peak capacity in the opening year will be 6,280 passengers per hour per direction. The system will be expandable to allow for a 50% increase in capacity.

Ridership Estimates

2030 travel forecasts for the project anticipate about 116,000 daily transit boardings. In the initial year of full operations, the project anticipates approximately 99,800 daily boardings.

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Appendix D

Financial Charts and Tables

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Project and Systemwide Sources and Uses of Funds, FY2010 - FY2030, YOE $millions

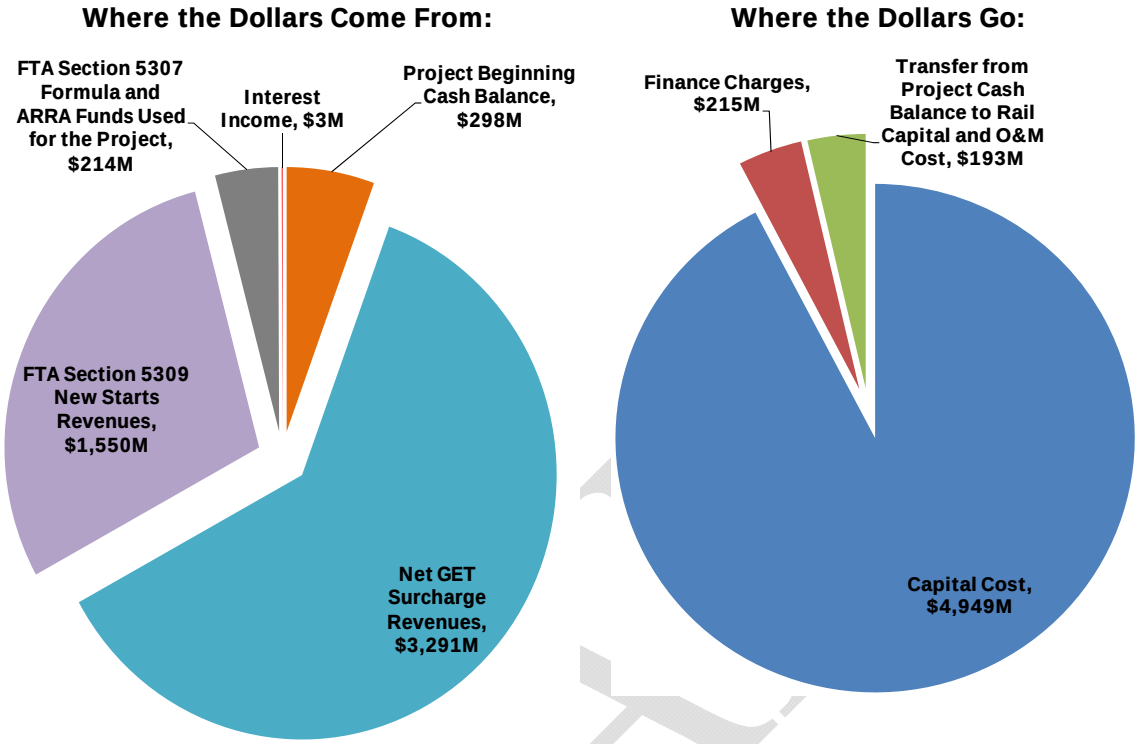
SOURCES OF FUNDS	YOE $M
Project Capital Sources of Funds	
Project Beginning Cash Balance	298
Net GET Surcharge Revenues	3,291
FTA Section 5309 New Starts Revenues	1,550
FTA Section 5307 Formula and ARRA Funds Used for the Project 1/	214
Interest Income	3
Transfer from Project Cash Balance to Ongoing Rail Capital and O&M Cost	(193)
Subtotal Project Capital Sources of Funds	**$5,163**
Ongoing Capital Sources of Funds	
FTA Section 5309 Fixed Guideway Modernization	80
FTA Section 5309 Bus Discretionary	116
FTA Section 5307 Formula Funds Used for Ongoing Capital Cost	499
FTA Section 5307 and 5309 Grants Carryover from Prior Years	50
American Recovery and Reinvestment Act	26
FTA Section 5316 (JARC) and 5317 (New Freedom)	0
Transfers to the State's Vanpool Program	(3)
Transfer from Project Cash Balance to Ongoing Rail Capital Cost	54
City General Obligation Bond Proceeds	404
Subtotal Ongoing Capital Sources of Funds	**$1,225**
TOTAL CAPITAL SOURCES OF FUNDS	**$6,388**
Operating Sources of Funds	
Fare Revenues (TheBus and Rail)	2,098
Fare Revenues (TheHandi-Van)	60
Subtotal Fare Revenues	**$2,158**
FTA Section 5307 Formula Funds Used for Preventative Maintenance	247
FTA Section 5316 (JARC) and 5317 (New Freedom)	20
Transfer from Project Cash Balance to Rail O&M Cost	140
City Operating Subsidy	5,871
TOTAL OPERATING SOURCES OF FUNDS	**$8,436**

USES OF FUNDS	YOE $M
Project Capital Uses of Funds	
Project Capital Cost	4,949
Subtotal Project Capital Cost	**$4,949**
Finance Charges	
Interest Payment on GO Bonds Issued for the Project	191
Interest Payment on Tax-Exempt Commercial Paper	10
GO Bond Issuance Cost	13
Subtotal Finance Charges	**$215**
Subtotal Project Capital Uses of Funds	**$5,163**
Ongoing Capital Uses of Funds	
Additional Railcar Acquisitions	35
Project Capital Asset Replacement Program	150
TheBus Vehicle Acqusitions	667
Other Capital Cost	235
TheHandi-Van Vehicle Acquisitions	138
Subtotal Ongoing Capital Uses of Funds	**$1,225**
TOTAL CAPITAL USES OF FUNDS	**$6,388**
Operating Uses of Funds	
TheBus O&M Costs	5,459
Rail O&M Costs	1,613
TheHandi-Van O&M Costs	1,310
Other O&M Costs	55
TOTAL OPERATING USES OF FUNDS	**$8,436**

1/ Includes $4M from American Recovery & Reinvestment Act of 2009

Note: totals may not add due to rounding

Project Sources and Uses of Funds, YOE $millions



Note: Totals may not add due to rounding
ARRA = American Recovery and Reinvestment Act

Source: Financial Plan, June 2012

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SUMMARY OF HART FINANCIAL INFORMATION - FY2012 to FY2014

(dollars)

	FY2012 Actual	FY2013 Budget	FY2013 Projected	FY2014 Proposed
Total Budget				
Operating Budget	20,582,626	21,069,193		20,917,259
Capital Improvements	354,736,280	491,584,960		1,340,438,300
Total Budget Request	375,318,906	512,654,153		1,361,355,559
Operating Expenses				
Personnel	8,968,714	12,971,682	10,406,533	13,030,366
Current expenses	6,917,651	8,081,511	6,370,244	7,880,893
Equipment & Software/Depreciation	18,069	16,000	0	6,000
HART Operating Total	15,904,434	21,069,193	16,776,777	20,917,259
Reimbursements to Other City Depts.				
Salaries, Fringe Benefits & Current Expenses		1,065,402	452,854	985,971
City Overhead Contribution (CASE)		1,014,467	865,297	996,060
Other City Depts. Reimbursements Total	1,049,544	2,079,869	1,318,151	1,982,031
HRTP Capital Expenses				
Consultant Services		64,593,540	10,365,120	19,731,900
Design Services		72,673,230	111,560,542	39,867,500
Programmatic Agreement		100,000		1,950,000
Utility Relocation		17,342,190		134,500,000
Construction, Construction Mgmt. & Inspection		243,966,420	90,187,459	304,466,100
Core Systems including Equipment		55,556,510	32,250,852	425,907,000
Land Acquisition		34,181,200	23,586,554	85,570,000
Relocation		3,171,870	190,995	1,000,000
Art		0	2,042	1,975,000
Other (Contingency and Recertification)		0	0	325,470,800
HART Capital Program Total	245,259,271	491,584,960	268,143,564	1,340,438,300

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WOFH RFCR #00016 HDOT Master Agreement Requirements
HART West Oahu/Farrington Hwy Guideway CONTRACT #CT-HRT-10H0137
HART Contract Change Order Authorization -WOFH CO#34

Scope:

HART issued the Master Agreement between HDOT and the City and County of Honolulu on February 28, 2011 via RFCR 00016. On April 20, 2012 HART provided the executed Joint Use and Occupancy Agreement (a part of the Master agreement) to the Design-Builder with direction to commence the maintenance requirements effective immediately. The Design-Builder has been incurring and invoicing for cost associated with the Joint Use and Occupancy activities since May 2012 and will continue to incur and invoice such costs on a monthly basis until the Master Agreement has been terminated.

The regularly occurring or routine maintenance Joint Use and Occupancy Agreement Work includes the items captured in the HART amended and simplified "HDOT Maintenance Guidelines" which generally includes, but is not limited to, the following elements:

1) Minor road repair such as potholes, striping, etc.,
2) Trash pick-up,
3) Landscape maintenance including tree trimming,
4) Sign maintenance, and
5) Dead animal pick-up.

Justification:

Actual cost expended under the direction of RFCR 00016 from May 2012 – March 2013 is $521,503.82. The Provisional Sum reflects a forecasted amount through the terminated agreement and the completion of the project. Costs are tracked in accordance with the force account provisions of the contract.

Cost of Change: $4,900,000

Original Scope and Budget: Not anticipated by the contract.

Funding Source: 90.07 Contract Contingency "Known Changes". This will not impact the Program Contingency of $644 Million.

Encumbered Funds: Per the "Contract Balance Report" (data date 5/13/2013), a total of $11,044,931 is encumbered as contingency for this contract ($9,363,931 from cash appropriations + $1,681,000 from bond fund appropriations). The change amount would be invoiced over the life of the project on a monthly basis. There are sufficient funds encumbered as contract contingency to cover this change.

Contingency Remaining: $54,609,821 (original $91,929,216 less Change Orders 1-33 plus budget transfers) This Contract Change Order will reduce the Contingency Remaining Value to $49,709,821. This value does not reflect an anticipated budget transfer into the contract contingency of $5.8M.

Cost Goal per Negotiation none

Strategy Memo:

Schedule Impacts: none

Impacts to Other Contracts: none

Attachments: Provisional Sum Analysis, RFCD and RFCR

Lesson Learned: Coordination with third party agencies regarding agreements prior to execution of contract so as to benefit from a competitive bid.

Recommendation: HART to approve Contract Change Order

	5/24/13		5/28/2013		6/6/13
Project Manager	Date	Deputy Director	Date	Director of Engineering and Construction	Date
	6/7/13		6/7/13		
Chief Financial Officer	Date	Chief Executive Officer	Date		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MAINTENANCE GUIDELINES
January 5, 1987

Applicable to all Districts - Oahu, Hawaii, Maui and Kauai.

These maintenance guidelines are established solely for the information and guidance of maintenance employees of the Division to provide some degree of consistency in maintenance level of service throughout the State. They are subject to modification as conditions warrant. They are not designed to, nor do they establish a legal standard of care.

ACTIVITY	MAINTENANCE LEVEL	REMARKS
PHYSICAL MAINTENANCE - PAVEMENT AREAS		
Flexible pavements	Repair potholes within 48 hours as they are reported. Other pavement deficiencies such as cracks, corrugations, depressions and localized failures shall be scheduled for repair as soon as possible or repaired and resurfaced through special maintenance contracts.	15-year pavement life expectancy.
	Slippery areas shall be repaired as soon as practicable.	Repair of slippery areas and resurfacing and reconstruction will depend on the scope of work and availability of funds.
	Resurface and/or reconstruct when extensive areas of cracking, raveling, distortion, depression or rutting are found.	**Approximately 7% of inventory shall be** targeted for resurfacing and/or reconstruction annually.

ACTIVITY	MAINTENANCE LEVEL	REMARKS
Rigid Pavement	Repair faults, settlements, cracks, and other localized failures as they are reported. Slippery areas shall be corrected as soon as practicable. Resurface and/or reconstruct areas having severe cracking, spalls, and surface irregularities.	Correct slippery areas to minimize hydro-planing as funds are available. Repair of slippery areas and resurfacing and reconstruction will depend on the scope of work and availability of funds.
PHYSICAL MAINTENANCE - ROADSIDE Shoulders and Medians	At right and left edge of traveled way: - Freeways - repair drops or buildups of more than 2". - Other Highways - Repair drops or buildups of more than 3". Ruts and potholes should be repaired as they are reported.	Stabilize existing dirt shoulders on planned program.
Ditches and Slopes	Clear and reshape ditches as needed whenever cross-sectional area is reduced by more than 25%. Reshape benches and slopes as needed to minimize potential slides. Remove slide and fallen rock from traveled way and shoulders immediately upon being aware of the situation.	Where benches exist, maintain slopes to provide access. Inspect slopes at known slide areas annually and following each slide.

ACTIVITY	MAINTENANCE LEVEL	REMARKS
Sidewalks, Bikepaths, Traffic Rolls and Islands, and Other Paved Areas Routine Maintenance	Repair abrupt drops in sidewalk of 1" or more within one week after being reported. Repair bikepaths, traffic rolls, and islands, other paved areas as needed.	
Litter Removal and Disposal	Pavement Area - Daily pickup in conjunction with other activities. Roadside - An average of twice weekly and before each mowing. Remove dead animals immediately upon reporting and not to exceed 24 hours.	Certain sections may require more or less frequent attention depending on locality.
PHYSICAL MAINTENANCE - STRUCTURES Culverts, Drains and Syphons Curbs and Gutters	 Maintain minimum opening of 75% of the cross section. Repair abrupt failures and damages as they are reported. Curbs with drops of 6" or more and gutters with drops of 3" or more to be repaired within two weeks in critical areas: others within 2 months.	 Replace sub-standard culverts on planned program as funds are available.

ACTIVITY	MAINTENANCE LEVEL	REMARKS
Bridges and Overpasses	Maintain minimum of 75% of original channel for bridges over stream; correct minor structural defects; schedule cleaning and painting on 6-year cycle. Routine Inspection - At intervals not to exceed two years. Weight - limited Structures - At least once a year. Structurally deficient bridges - as often as required and after every freshet. In-depth inspection (including - underwater components) - at intervals not to exceed 6 years.	
Fences	Repair immediately if hazardous; otherwise repair within two weeks.	
Tunnels	Provide maintenance as needed. Wash painted vehicular tunnel walls once in 6 months.	Inspect tunnel annually.
Pumphouse	Provide services for pump; check warning devices for safety of motorists monthly.	
Pedestrian Overpass	Repair defects as they are reported; repaint handrails and steel structures once every six years.	

ACTIVITY	MAINTENANCE LEVEL	REMARKS
LANDSCAPE MAINTENANCE		
Trees, Shrubs and Plantings	Prune trees, hedges, vines shrubbery and other vegetation, as needed, to maintain sight distance, prevent encroachment into traffic lanes, prevent obstruction of traffic control devices and signs, and to prevent overhanging branches or fruit from falling into right-of-way.	Trees that overhang into the highway right-of-way shall be pruned up to the right-of-way line. Provide advance notice of ten days (written or verbal) to adjacent property owner or renter, prior to pruning and/or removing fruit of overhanging trees.
Coconut Trees	Prune coconut trees, as needed, before fruits and fronds mature.	Inform or leave note for owner or renter of adjacent property to remove maturing fruits and fronds of coconut trees that overhand into highway right-of-way within 10 days, or State will remove fruits and fronds from coconut trees if there is no action or no response after 10 days.
Mechanical Mowing	Class A - Mow to maintain park-like appearance. Class B & Class C - Shoulders not to exceed 10"; lawn type not to exceed 4". Other areas only to control encroachment into traffic lanes and shoulders and to maintain sight distance.	Maintain minimum cut - 2-1/2".

Revised November 1989

ACTIVITY	MAINTENANCE LEVEL	REMARKS
Manual Weed Control	Class A - Keep area reasonably free of weeds. Class B & Class C Landscaped Areas - Weeds not to exceed plant height.	Refer to "A Guide on Landscaping of State Highways", 1987 for classification of landscaped areas.
Chemical Weed Control	Dry Conditions - Twice a year. Wet Conditions - Once every 3 months.	Type, formulation and application rate to be determined by respective District.
Grass Trimming	Class A - Edging to provide park-like appearance. Class B & Class C - Trim to control encroachment into traffic lanes, paved shoulders and sidewalks.	
Fertilizing	Class A - 3 times per year with at least 500#/acre. Class B - 2 times per year with at least 500#/acre. Class C - Not more than once per year.	
Sprinkling and Watering	Dry Conditions - Watering twice a week. Sandy Soil - Three times a week. New Plantings - Three times a week.	

Revised November 1989

ACTIVITY	MAINTENANCE LEVEL	REMARKS
TRAFFIC SERVICES		
Pavement Markings including Traffic Rolls		
a. Raised markers	Non-reflectorized marker loss should not exceed 10 in 100 feet. Reflectorized markers should be replaced when 2 or more successive markers are missing.	Reflectorized lane markers shall be installed on planned program.
b. Traffic Paint	Repaint pavement markings when marking condition reaches about No. 4 degree of abrasion and erosion, ASTM Method: D821. Thickness of film not less than 16 mils when newly applied.	Highways with pavement width of 20 ft. or greater shall be edge striped on planned program. (Pavement less than 20 ft. wide should not be edge striped.)
c. Marking Tape	Replace when markings are ineffective or more than 10% in 100 feet is missing, worned or damaged	

ACTIVITY	MAINTENANCE LEVEL	REMARKS
Guardrails	If hazardous, replace deteriorized wood and metal guardrails as failures are reported or protect area with barricades and warning signs; schedule and accomplish all replacement as soon as practicable. Raise settled guardrail to standard height if drop is 6" or more. Repaint wooden rail once every 3 years.	Wood rails and posts no longer to be installed on new construction projects. Existing wood guardrails to be replaced on planned program. Replace wood rails with metal if more than 50% is deteriorated.
Impact Attenuators	Repair or reset immediately if hazardous; otherwise, repair within 3 working days. Check Hi-dro cell installation monthly to insure that all cells are filled with water.	If Hi-dro cushion units require extensive repairs after accident, the units shall be pulled out and reset as much as possible until repairs are made.
Signs, Markers, etc. Construction Warning Delineator	Correct deficiencies on regulatory and warning signs as they are reported; all other signs within one week. Signs shall be kept legible. Clean to Maintain 80% visibility. Clean reflectors to maintain 80% visibility.	Signs exposed to traffic shall be mounted on posts meeting "break-away" requirements.

ACTIVITY	MAINTENANCE LEVEL	REMARKS
Traffic Control Signals and Flashers	Correct deficiencies within capability immediately as they are reported or implement emergency measures and request assistance; repaint standards once every 3 years. Inspect and check timing at least once a month. Check and clean controller every 6 months, clean lense and reflector every 6 months. Check school flasher and adjust time clock monthly. Inspect coordination timing weekly; clean and regap load relays monthly; check controller cabinets monthly.	Turn off school flashers during vacation periods. No painting required on galvanized or aluminum standards. Also clean lens and reflector with every replacement of light bulb.
Highway Lighting System	Galvanized or aluminum lighting standards no painting; **repaint others once every 3 years; inspect photoelectric cells** regulators, and oil switches annually; repair defects within capability imediately as they are reported; otherwise, remove damaged parts, if hazardous, and/or erect barricades and warning signs as necessary.	
Brooming and Sweeping	Urban Freeways - At least once every two weeks. Rural Freeways and Conventional Highways in Developed Areas - At least once a month. Bikepath - Once every two weeks.	

ACTIVITY	MAINTENANCE LEVEL	REMARKS
Graffiti Removal	Illegible warning and regulatory signs due to graffiti should be corrected promptly upon notification. Others should be scheduled and corrected within two weeks of notice.	
STORM DAMAGE Damages resulting from storm, earthquake and other causes.	Restore roadway to passable condition and clear drainage ways as soon as possible. Provide emergency protective measures, warning signs and barricades. Schedule and accomplish permanent repairs as soon as practicable.	Trouble spots should be considered for improvement to eliminate or reduce recurrences.
VEHICLE DAMAGE REPAIRS Repairs and replacement of damaged signs and markers, traffic control signals, highway lighting system and guardrails caused by accidents.	If hazardous, repair and replace damaged parts as they are reported or provide temporary protective measures; schedule and accomplish other repairs as soon as practicable.	
TRENCH REPAIRS	If 2 inch or more drop - repair within 48 hours. If 2 inch or less drop - repair within two weeks.	If result of permit work and performance bond is still in effect, contact applicant to perform repairs.

ACTIVITY	MAINTENANCE LEVEL	REMARKS
TRUCK ESCAPE RAMP	Maintain according to construction plans using No. 3 coarse rock only with no fines. Inspect ramp components such as gravel windrow, guardrails, signs, entrance and terminal conditions after heavy rainfall and following each known usage of the ramp or at least once every three (3) months. Spray herbicide to control the growth of vegetation once every three (3) months or as required.	HWY-CM 2.94641 ADDENDUM NO. 1 DATE; MARCH 11, 1987

WOFH RFCR #00058 TCP Construction Partial Suspension
HART West Oahu/Farrington Hwy Guideway CONTRACT #CT-HRT-10H0137
HART Contract Change Order Authorization -WOFH CO#35

Scope:

Design-Builder impacts incurred as a result of a suspension in the Contract work from March 19, 2012 to July 13, 2012. This Partial Suspension of work was issued in accordance with SP-7.1(a)(5) necessary due to previously unidentified Traditional Cultural Properties (TCP). The Partial Suspension periods are as follows:

-All construction work was suspended from March 19, 2012 to April 23,2012. Pre-engineering work including, but not limited to, geotechnical soil borings,potholing and tree relocations could still continue.

-As of April 23, 2012, construction work was able to commence between the Western Contract limit to Fort Weaver Road/Route 76.

-As of April 24, 2012, construction work was able to commence between the Eastern Contract limit to Fort Weaver Road/Route76 for the construction activities authorized under NTP #2 (Utility Relocations).

-As of July 13, 2012, all work was able to resume.

Justification:

Due to the HART decision to stop all ground disturbing activities.

In accordance with Special Provisions 7.1(c) "Reimbursement to Contractor. In the event that the Contractor is ordered by the Officer in Charge in writing as provided herein to suspend all or part of the work under the contract in accordance with subsections (a)(3), (a)(4), or (a)(5), the contractor may be reimbursed for actual money expended towards the project during the period of suspension. No allowances will be made for anticipated profits. [HAR 3- 125-7]"

Cost of Change:

$1,195,094

Original Scope and Budget:

Not anticipated by the contract.

Funding Source:

90.07 Contract Contingency "Known Changes". This will not impact the Program Contingency of $644 Million.

Encumbered Funds:

Per the "Contract Balance Report" (data date 5/13/2013), a total of $11,044,931 is encumbered as contingency for this contract ($9,363,931 from cash appropriations + $1,681,000 from bond fund appropriations). The change amount would be invoiced over a 1 month period. There are sufficient funds encumbered as contract contingency to cover this change.

Contingency Remaining:

$49,709,821 (original $91,929,216 less Change Orders 1-34 plus budget transfers) This Contract Change Order will reduce the Contingency Remaining Value to $48,514,727. This value does not reflect an anticipated budget transfer into the contract contingency of $5.8M.

Cost Goal per Negotiation Strategy Memo:

none

Schedule Impacts: none

Impacts to Other Contracts: none

Attachments: RFCD and RFCR

Lesson Learned: On-going coordination within HART departments to ensure that all requirements are met prior to construction.

Recommendation: HART to approve Contract Change Order

Project Manager	5/24/13 Date	Deputy Director	5/24/2013 Date	Director of Engineering and Construction	6/6/13 Date
Chief Financial Officer	6/7/13 Date	Chief Executive Officer	6/7/13 Date		

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION IX
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Hawaii, Nevada, Guam
American Samoa,
Northern Mariana Islands

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415-744-3133
415-744-2726 (fax)

Mr. Daniel A. Grabauskas
Executive Director/Chief Executive Officer
Honolulu Authority for Rapid Transit
City and County of Honolulu
Alii Place, Suite 1700
1099 Alakea Street
Honolulu, HI 96813

APR 20 2012

Re: Determination of No Historic Properties Affected and Authorization for Commencement of Construction, Honouliuli Ahupua`a Only

Dear Mr. Grabauskas:

The Honolulu Authority for Rapid Transit ("HART") has requested that the Federal Transit Administration ("FTA"): (1) concur that no historic properties within the Honouliuli ahupua`a will be affected by the Honolulu High-Capacity Transit Corridor Project ("Project"); and (2) permit construction to begin in the Honouliuli ahupua`a. FTA responds to those requests as follows:

Under Stipulation II of the National Historic Preservation Act Section 106 Programmatic Agreement for the Project, which was signed in January 2011 ("PA"), HART was required to conduct a phased evaluation of potential traditional cultural properties ("TCP") prior to the commencement of construction on each area evaluated. Consistent with that requirement, HART, among other things: (1) held public, consultation meetings to collect information to assist with the identification of potential TCP within the area of potential effects ("APE") of the Project; and (2) conducted an evaluation of potential TCP within the Honouliuli ahupua`a, the first of five geographic subdivisions within Section 1 of the Project.

HART's efforts to comply with Stipulation II of the PA have resulted in the preparation of the following documents, which comply with 36 C.F.R. § 800.11 and are consistent with the intent of National Register Bulletin 38:

- *Traditional Cultural Properties Report; Honouliuli Ahupua`a; Honolulu Rail Transit Project; Technical Memorandum*, Honolulu Authority for Rapid Transit (March 2012).

- *Preliminary Draft Report: Study to Identify the Presence of Previously Unidentified Traditional Cultural Properties in Sections 1-3 for the Honolulu High-Capacity Transit Corridor Project, Management Summary*, SRI Foundation & Kumu Pono Associates LLC, (March 26, 2012).

- *He Moolelo Aina – Traditions and Storied Places in the District of Ewa and Moanalua (in the District of Kona), Island of Oahu; A Traditional Cultural Properties Study – Technical Report*, Maly & Maly (January 20, 2012).

FTA has reviewed HART's report entitled *Traditional Cultural Properties; Honouliuli Ahupua`a; Honolulu Rail Transit Project; Technical Memorandum* and related studies conducted to identify potential TCP within and near the APE of the Project. FTA has also reviewed HART's communications to the Hawai`i State Historic Preservation Division ("SHPD") requesting that it concur with HART's determination of no historic properties affected within the Honouliuli ahupua`a, as well as SHPD's concurrence letter, dated April 2, 2012, and SHPD's letter to HART, dated April 20, 2012. After reviewing these documents, FTA concurs that no potential TCP were identified within the APE of the Project in the Honouliuli ahupua`a and, as a result, the Project would not affect TCP within the Honouliuli ahupua`a. Therefore, FTA also has, in accordance with 36 C.F.R. § 800.4(d)(1), determined that no historic properties within the Honouliuli ahupua`a would be affected by the Project.

FTA acknowledges that only one potential TCP, Po`ohilo, was identified within the Honouliuli ahupua`a. However, mapping research indicated that Po`ohilo was located outside the APE of the Project and, thus, will not be affected by the Project.

Moreover, FTA appreciates that SHPD commented on possible effects Project construction in Kapolei may have on water sources related to limu gathering at Oneula. However, based on geotechnical evaluations of the Project corridor and recent excavations, it is unlikely the Project will affect water sources related to limu gathering at Oneula.

Furthermore, FTA recognizes that portions of the Leina District are located within the Honouliuli ahupua`a. However, the pathway of the Leina District does not cross the APE of the Project within the Honouliuli ahupua`a. The Leina District does cross the APE of the Project further along the guideway of the Project outside the Honouliuli ahupua`a. The Leina District will be further evaluated in subsequent geographic subdivisions where it crosses the guideway of the Project.

As the Project will have no effect on historic properties within the Honouliuli ahupua`a, and given that HART has complied with the prerequisites set forth in the PA related to construction within the Honouliuli ahupua`a, FTA authorizes HART to commence construction activities in Honouliuli ahupua`a only. All construction activities within the Honouliuli ahupua`a must fall squarely within the scope of the Letter of No Prejudice, dated February 6, 2012.

Should you wish to discuss any of these issues, please contact Ted Matley, Community Planner, at (415) 744-2590.

Sincerely,

For Leslie T. Rogers
Regional Administrator

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

GUY H. KAULUKUKUI
FIRST DEPUTY

WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 20, 2012

Mr. Daniel A. Grabauskas
Executive Director and CEO
Honolulu Authority for Rapid Transportation
City and County of Honolulu
Alii Place, Suite 1700
1099 Alakea Street
Honolulu, HI 96813

Dear Mr. Grabauskas:

RE: Determination of Effect on Traditional Cultural Properties for Honouliuli Ahapuaa, Phase I of the Honolulu Rapid Transit Project. NHPA Section 106 Consultation on Stipulation II of the Programmatic Agreement Among the U.S. Department of Transportation Federal Transit Administration, the Hawaii State Historic Preservation Officer, the United States Navy and the Advisory Council on Historic Preservation regarding the Honolulu High-Capacity Transit Corridor Project in the City and County of Honolulu, Hawaii (PA) Honouliuli, Ewa Moku, Island of Oahu

Thank you for your letter of April 12, 2012 which we received by e-mail on April 16, 2012. Your letter responds to our letter of April 2, 2012 in which 1) we concurred with your determination of "no effect to historic properties" for Poohilo ili, a possible traditional cultural property (TCP) in the ahupua'a of Honouliuli; 2) asked for more information about the possibility of encountering water in the karst systems that may affect limu gathering at Oneula Beach, limu gathering areas are potential TCPs; and 3) asked for more information regarding the Leina a Ka Uhane District noted in your technical report.

Your response letter notes that archaeological and geotechnical investigations have encountered no indication of karst caverns at the East Kapolei Station area. Thank you for this information which we understand to indicate that underground water systems, if any, will not be impacted by the rail project.

You also note that the district boundary for the Leina a Ka Uhane is approximately 1-3 miles from the project area. You further note that "the part of the alignment in the Honouliuli ahupuaa

does not impact the Leina district." Thank you for this clarification, which we assume puts the Leina a Ka Uhane district outside the boundary of the APE. Based on the information provided, the rail will not affect viewplanes between the two sites, or between either site and the ocean. Thus, we would agree the Leina Ka Uhane district is not affected in the Honouliuli area.

In conversations with the FTA, a question regarding phasing of the Traditional Cultural Studies was raised. The SHPO has no opposition to phasing of the Traditional Cultural Studies, as long as each phase of the study is timely turned in to our office for review. This means that we need all of the information at least 30 days in advance of when you would like a response. Given that these are very large documents (in excess of 900 pages), more than 30 days would be much appreciated. We also request that you provide us with all of the relevant information with which to make a decision with your initial request.

Based on the information provided for our review, we concur that no potential traditional cultural properties identified in the Honouliui ahupuaa will be affected by the project. Please contact myself, or Pua Aiu at 692-8040 or by e-mail at pua.aiu@hawaii.gov if you have further questions.

Sincerely,

WILLIAM J. AILA, JR.
State Historic Preservation Officer

C: Ted Matley, FTA region IX (by e-mail)
Joonsik Maing, FTA region IX (by e-mail)
Faith Miyamoto, HART (by e-mail)

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION IX
Arizona, California,
Hawaii, Nevada, Guam
American Samoa,
Northern Mariana Islands

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Mr. Daniel A. Grabauskas
Executive Director/Chief Executive Officer
Honolulu Authority for Rapid Transit
City and County of Honolulu
Alii Place, Suite 1700
1099 Alakea Street
Honolulu, HI 96813

JUL 13 2012

Re: Determination of Eligibility and Finding of Effect for Previously Unidentified Traditional Cultural Properties in Sections 1-3, Honolulu Rail Transit Project; Construction Authorization, Sections 1-3 Only

Dear Mr. Grabauskas:

Enclosed is the Federal Transit Administration's (FTA) letter, dated July 13, 2012, notifying the Hawaii State Historic Preservation Officer that there is no adverse effect on eligible traditional cultural properties (TCPs) within Sections 1-3 of the Honolulu Rail Transit Project.

By copy of this letter, FTA advises the Honolulu Authority for Rapid Transit (HART) that the proposed construction within Sections 1-3 of the Honolulu Rail Transit Project may commence. All construction activities within Sections 1-3 must fall squarely within the scope of the Letters of No Prejudice, dated February 6, 2012 and May 17, 2012.

If you have questions regarding this determination, please contact Ted Matley, Community Planner, at (415) 744-2590.

Sincerely,

Leslie T. Rogers
Regional Administrator

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION IX
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JUL 13 2012

The Honorable William J. Aila, Jr.
Hawaii State Historic Preservation Officer
Department of Land and Natural Resources
Kakuhihewa Building
601 Kamokila Boulevard, Suite 555
Kapolei, Hawaii 96707

Attention: Dr. Pua Aiu, SHPD Administrator

Re: Determination of Eligibility and Finding of Effect for Previously Unidentified Traditional Cultural Properties in Sections 1-3, Honolulu Rail Transit Project

Dear Mr. Aila:

The Federal Transit Administration (FTA) has completed its review of the Honolulu Authority for Rapid Transportation (HART) submittal entitled, "Honolulu Rail Transit Project, Determination of Eligibility and Finding of Effect for Previously Unidentified Traditional Cultural Properties in Sections 1-3," dated May 25, 2012.

Background reports for a larger area (compliant with 36 CFR § 800.11 documentation standards and following the intent of National Register Bulletin No. 38) that were also submitted include:

- *Study to Identify the Presence of Previously Unidentified Traditional Cultural Properties in Sections 1-3 for the Honolulu Rail Transit Project, Management Summary (April 2012)*

- *He Mo`olelo `Aina – Traditions and Storied Places in the District of `Ewa and Moanalua (in the District of Kona), Island of O`ahu. A Traditional Cultural Properties Study-Technical Report (April 2012)*

FTA has also reviewed your letter of July 3, 2012, concurring with the determination of "no adverse effect" on Traditional Cultural Properties (TCPs) eligible for the National Register in Sections 1-3 of the proposed Honolulu Rapid Transit Project. Based on FTA's review and your concurrence, and in accordance with 36 CFR § 800.4(d)(1), FTA has determined that there is no adverse effect on eligible TCPs within Sections 1-3.

FTA has noted your comment regarding the Leina Ka Uhane District and has confirmed that based on the guidance contained in National Register Bulletin No. 38, the Leina Ka Uhane District is

outside the Area of Potential Effect. Information regarding this determination was sent to SHPD on July 5, 2012.

Finally, to clarify one statement in your letter about why the study focused on Native Hawaiian TCPs, HART undertook this study based on requests made by certain consulting parties during the Section 106 consultation process for additional research related to previously unidentified Native Hawaiian TCPs, as memorialized in the Programmatic Agreement. However, the studies listed below addressed all TCPs, including Native Hawaiian ones, in compliance with Section 106 of the National Historic Preservation Act.

- *Historic Resources Technical Report, Honolulu High-Capacity Transit Corridor, August 15, 2008*
- *Cultural Resources Technical Report, Honolulu High-Capacity Transit Corridor, August 15, 2008*
- *Addendum 01 to the Cultural Resources Technical Report, Honolulu High-Capacity Transit Corridor, May 22, 2009*
- *Addendum 01 to the Historic Resources Technical Report, Honolulu High-Capacity Transit Corridor, June 7, 2010*
- *Draft Historic and Archaeological Technical Report, Honolulu High-Capacity Transit Corridor, September 1, 2006*
- *Archaeological Resources Technical Report, Honolulu High-Capacity Transit Corridor, August 15, 2008*

If you have questions regarding this determination, please contact Ted Matley, Community Planner, at (415) 744-2590.

Sincerely,

Leslie T. Rogers
Regional Administrator

cc: Daniel A. Grabauskas, Executive Director and CEO, HART

HART Management
Ansaldo Honolulu Joint Venture
Site Visit Report

May 26, 2013 - June 3, 2013

Purpose of Trip

1. International Association of Public Transport (UITP) Conference
   - AnsaldoBreda Executive Meetings
   - Technology Forums
   - HART Vehicle MockUp
2. Ansaldo Driverless Metro Systems
   - Copenhagen
   - Brescia
   - Milan
3. AnsaldoBreda Factory Tour
   - Pistoia

UITP Conference

Presentation of HART Vehicle Mock-Up

AnsaldoBreda Leadership
-Alberto Rosania, Chairman
-Maurizio Manfellotto, CEO

Technology Forums

Ansaldo Driverless Metro Systems

Copenhagen / Brescia / Milan

Copenhagen Service Facility

Copenhagen

Met with Owners – Metroselskabet:

Anne-Grethe Foss – Director CEO

Chris Cox – Operations Manager

Meeting with Anne-Grethe Foss, Metroselskabet CEO

Copenhagen

Met with AnsaldoSTS Executives

Francesco Di Maio – Senior Vice President
Ulderigo Zona – VP Construction & Commissioning
Piero Marotta – VP Operations & Maintenance

Meeting with Ansaldo Executives and Senior Managers

Copenhagen

- System includes 2 lines
- 12.7 Miles
- 22 Stations
- 34 Trains
- Contract 1996
- Operations began Oct 2002
- Three phased openings through 2007
- 98% Service Availability after 11 years (no exclusions)
- Platform Doors Underground
- Platform Gates Retrofitted to Above Ground Stations (in process)
- New Expansion System - CityRingen

Copenhagen

Touring the System in Service

Copenhagen’s TOD

Orestad – Copenhagen’s Kapolei

Copenhagen

Service Facility

Copenhagen

CityRingen Service Facility Under Construction

Brescia

Met with Owners

Adriano Piroli – Mayor
Alessandro Triboldi – City Manager
Ettore Fermi – Chairman, MetroBrescia

Meeting with Mayor and Staff

Brescia

Met with Owner & AnsaldoSTS Executives

Sergio De Luca – CEO
Francesco Di Maio – Senior Vice President
Giovani Bocchetti – Senior Vice President
Domenico Lanciotto – VP Engineering

Meeting with Owner and Ansaldo Execs

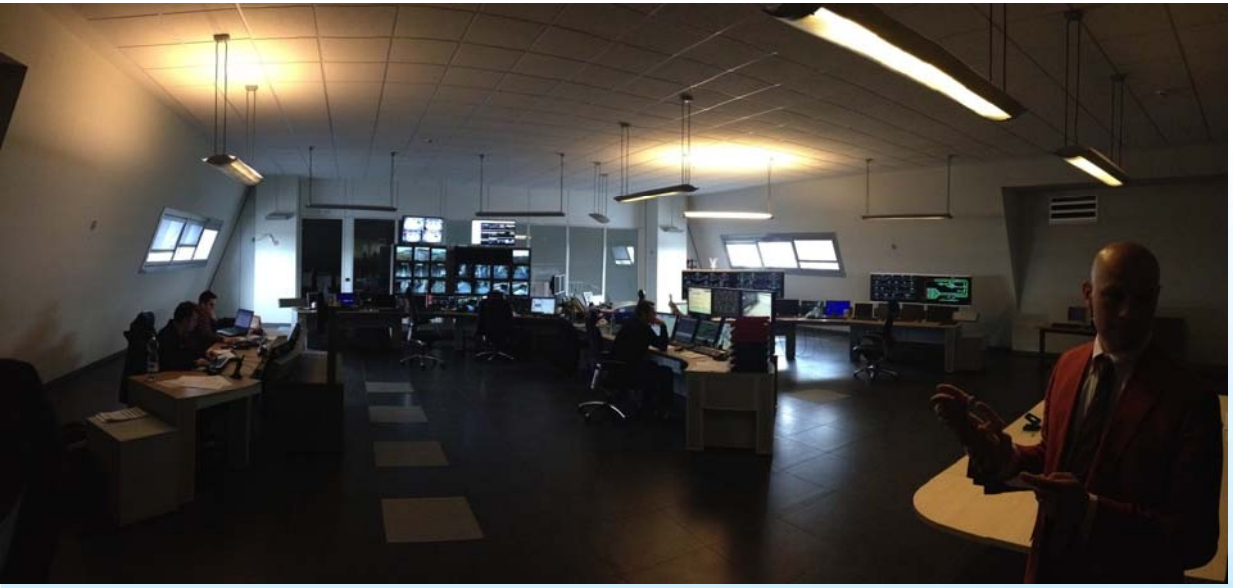
Brescia

- System includes 1 line
- 8.1 Miles
- 17 Stations
- 18 Trains
- Contract 2003
- Operations began March 2013
- Archaeological Delays – nearly 4 years
- 99.6% Service Availability (less than 3 months in service)
- Platform Doors at all stations
- Future Second Line is being planned

Brescia

Touring the System in Service

Brescia



Control Center and Service Facility

Milan

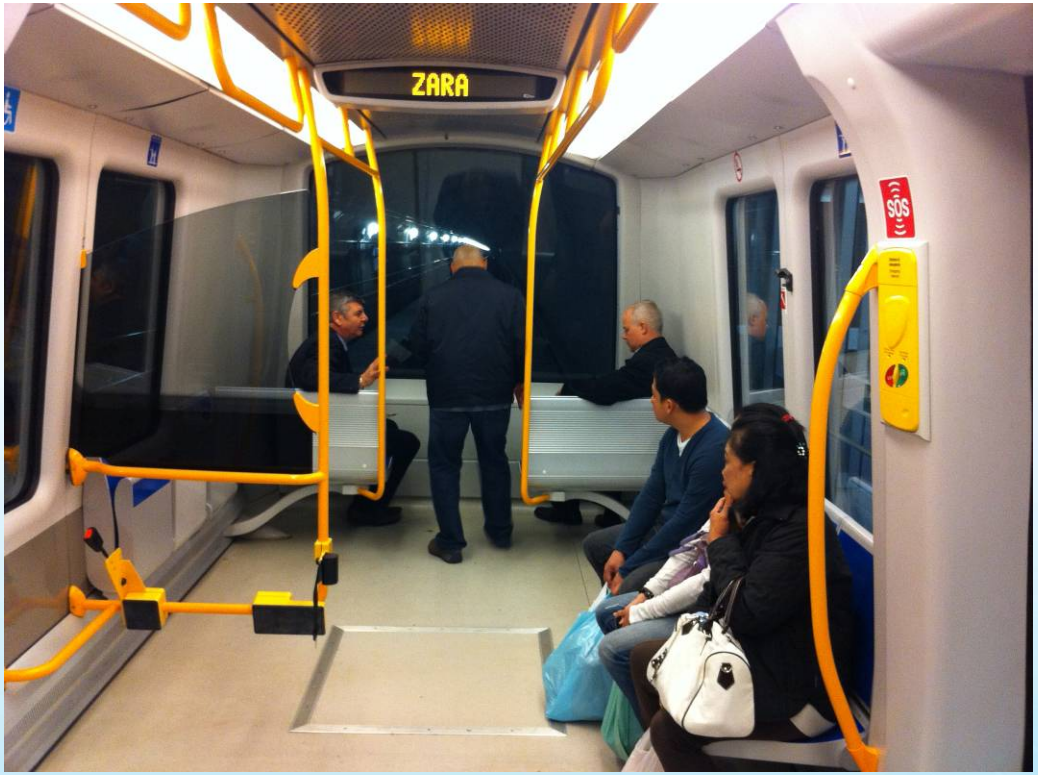
- **Met with AnsaldoSTS Executives**

Giovanni Bocchetti – Senior Vice President

Milan

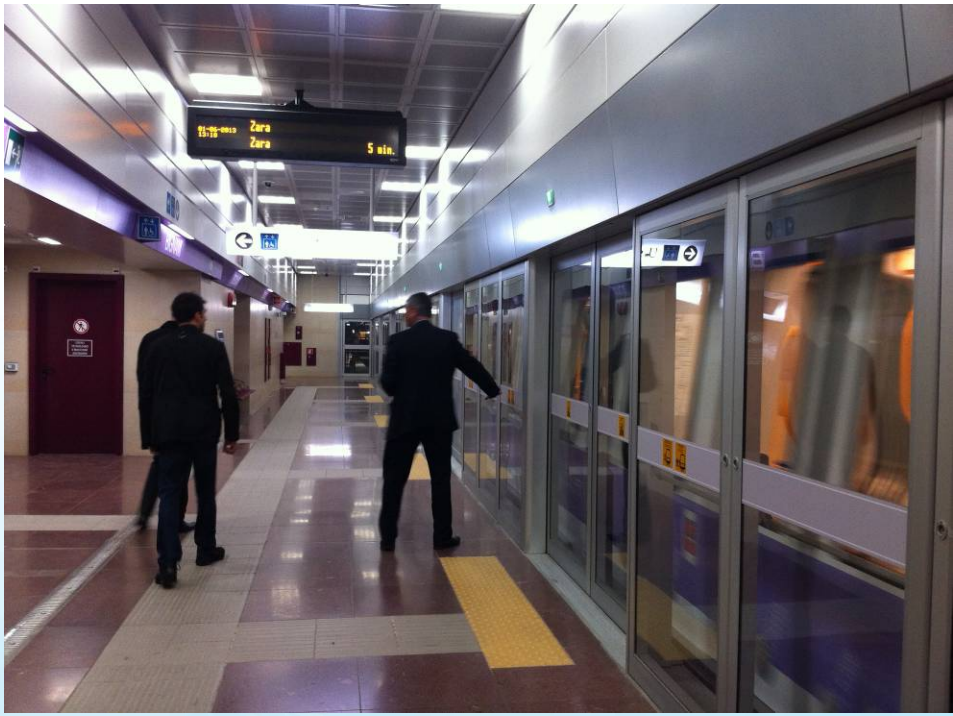
- Driverless Line 4 / Line 5.
- 9.5 / 7.8 Miles
- 21 / 19 Stations
- 47 / 21 Trains
- Contracts 2009
- Operations 2015 / 2013
- Ansaldo does not do operations
- Platform Doors at all stations

Milan



Touring the System in Service

Milan



Touring the System in Service

AnsaldoBreda Factory Tour

Visit to Train Manufacturing Facility

AnsadloBreda Factory

Met with AnsaldoBreda Executives

- **Maurizio Manfellotto – CEO**
- **Alessio De Sio – Senior Vice President**
- **Giampaolo Nuonno – VP Program Management**
- **Marco Sacchi – Director of Research & Development**
- **Giulio Caione – Program Management**
- **Rosario Falanga – Plant Director**
- **Luigi Accardo – Project Engineer**

AnsaldoBreda Factory

Pistoia, IT

AnsaldoBreda has the following key locations in Italy:

Naples – Electrical Products

(HART Vehicle Systems Design)

Pistoia – Engineering Design and Mfg

(HART Vehicle Design)

Reggio Calabria – Vehicle Mfg

(HART Carshells)

Palermo – Vehicle Refurbishing

AnsdaloBreda Factory

HART CEO, Dan Grabauskas and
AnsaldoBreda CEO, Maurizio Manfellotto

Discussion with AnsaldoBreda Design Engineers

AnsdaloBreda Factory

AnsaldoBreda Production Line

(right) AnsaldoBreda CEO Maurizio Manfellotto

Lessons Learned

Lessons Learned

- <u>**Softening The Guideway with Plantings**</u>

  Copenhagen made effective use of plantings to soften the visual impact of the guideway.

Lessons Learned

- **<u>Platform Gates vs. Platform Fall Detection</u>**

  Copenhagen is retrofitting all outdoor stations with Platform Gates because the Fall Detection System is subject to many false alarms creating significant service delays.

- **<u>Fewer Seats on Trains</u>**

  Copenhagen removed fixed seats to create more available floor space for prams, bicycles and luggage. (HART additional seats will be flip-up to not compromise available floor space).

Lessons Learned

- **<u>Fare System – Open vs. Gated</u>**

Copenhagen & Brescia	**Open**
Milan	**Gated**

- **<u>Test Track at Service Facility</u>**

  Each system visited stressed the importance of including a test track at the service facility. The test track is necessary for post maintenance verification of train safety performance.

- **<u>Interfaces Between Contractors</u>**

  Minimize the number of contractor interfaces.

Lessons Learned

- **<u>CCTV</u>**

  All systems visited stressed the importance of sufficient surveillance and making the cameras visible and apparent as a deterrent.

- **<u>Clear and Adequate Signage</u>**

  Customer clarity with effective signage was a common theme at all systems.

- **<u>Redundant Elevators</u>**

  Copenhagen regrets not starting with redundant elevators. They found that although the elevators were intended for the disabled, all passengers were attracted by the open glass elevators and they quickly became over-utilized.

Lessons Learned

- **<u>Operations Start-Up</u>**

  All systems operators recommended early start-up of operations management and staffing. All systems utilized 99% local staff with no prior transit experience.

- **<u>Customer Training</u>**

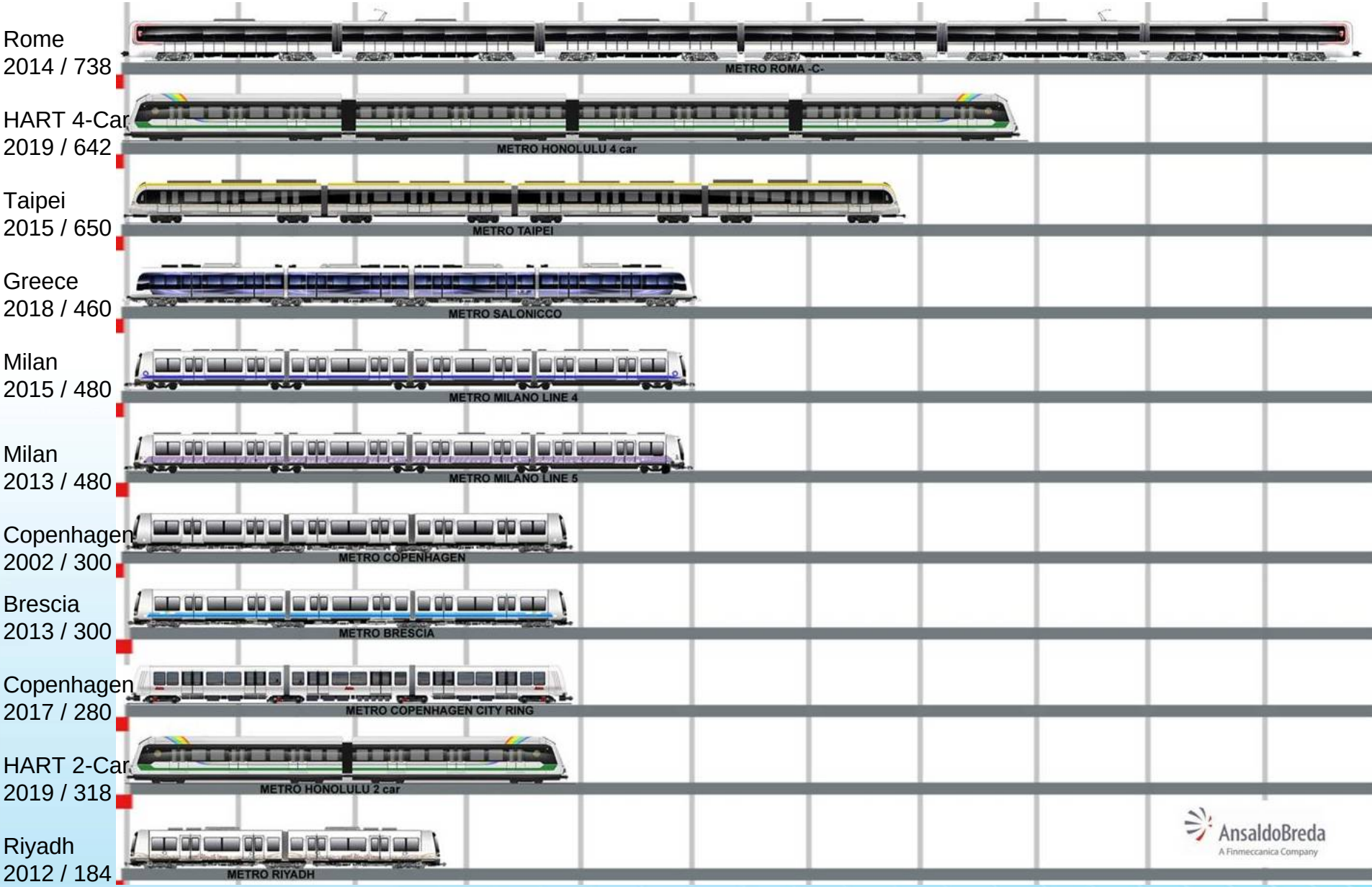
  The need for adequate customer training at start-up was emphasized. From ticket purchasing to train boarding, the riders must be familiarized with transit operations to minimize passenger induced delays.

Lessons Learned

- **<u>Longer Trains</u>**

  The graphic on the next slide illustrates the trend in driverless metro's to use longer trains.
  - ***Don't*** **buy infrastructure you don't need long-term.**
  - ***Do*** **use all the infrastructure you build and buy.**
  - ***Do*** **ensure the most convenient passenger flow through the station and on and off the trains. Key for elderly, disabled and customers with children.**

Year / Passengers



4-Car Trains

Customer Service Benefits We Heard About

- **Improved Station Flow**
  - *Maximize utilization of the station platforms and maximize efficiency of boarding and de-boarding.*
  - *With short trains, customers are forced to funnel to the middle of the platform.*
- **Doubled Train Capacity**
  - *Unlikely to leave passengers on platform to wait for next train.*
  - *Fewer passengers standing especially during off-peak service – more seats.*
  - *Better availability of seats and special use areas - Wheelchairs, Prams, Bikes, Luggage and Surf Boards.*
- **Customer Perception Improvement**
  - *Less crowding means a more enjoyable experience and attracting more customers.*
  - *More Equalized passenger distribution through gangways of longer trains.*
- **Better Special Event Service**
  - *Longer trains will more effectively disperse large crowds during special events by utilizing the entire platform and loading twice as many passengers.*

4-Car Trains

Service Disruptions

- **Future Expansion from 2, to 3, to 4-Car Trains Would Be Disruptive to Service**
  - *Additional Train Qualification Testing on Main Line*
  - *Shop disruption while inserting M-Cars*
  - *Loss of service while trains are out for modification*

FTA PMOC Recommendation

- **May 2012 the PMOC Recommended Longer Trains**

4-Car Trains

Cost Savings

- **Middle Cars are Less Costly than End Cars**
  - *Middle cars have no manual control stations, or train control equipment.*

- **Shorter Trains require twice as much train control equipment**
  - *Both on the vehicles, and in the stations*

- **Lower Overall Maintenance Costs**
  - *Less vehicle and wayside train control equipment.*
  - *No "Extra" Platform Screen Gate Maintenance for Unused Doors with short trains*
  - *Longer trains mean Platform Screen Gate's are fully utilized*

- **Cost Savings in the $Millions…**
  - *We will report back in the near future with a recommendation*

Mahalo!

Belgian “FYRA” High Speed Train

FTA PMOC Recommendation

From May 2012

OP32A - Transit Capacity Report

"It is recommended that the grantee and AHJV confer regarding plans to operate at frequencies that violate the minimum operating headway. A possible response would be to offer service with longer trains operating at four-minute headways…

…The fleet would also include a number of presumably less expensive middle cars and the level of comfort (seats/passenger) afforded passengers that are not riding in the peak of the peak would be increased. Operating at four-minute peak headways would also provide more capacity for surges in demand during the first several years of the contract."

MEETING AGENDA

Ansaldo Honolulu Joint Venture Site Visit
May 26th – June 3rd 2013

Sunday, May 26th

07:40 Dan Grabauskas Arrive GVA

16:00 International Association of Public Transport (UITP)
American Public Transportation Association (APTA)
Joint Meeting, Dinner.

- Sir Peter Gerard Hendy – Commissioner of Transport for London; incoming President UITP
- Michael Melinaphy – APTA – President & CEO
- Petra Mollet – APTA – Chief of Staff
- Flora Castillo – New Jersey Transit Board Member – APTA Chair
- Gary Thomas – Dallas Area Rapid Transit (DART) – President/Executive Director
- Steve & Ella Banta – Metro Light Rail, Phoenix, AZ - CEO
- Mike Allegra – Utah Transit Authority – Chief Capital Development Officer
- Larry Jackson & Wife – Long Beach Transit, California – President & GM
- John Inglish & Guest – Utah Transit Authority - GM
- Nuria Fernandez – New York MTA - COO
- Miryam Hernandez
- Doran Barnes & Wife Cynthia- Foothill Transit, Los Angeles, CA – Executive Director
- Lenay Gore – APTA –Director of Convention & Meetings
- Dan Grabauskas – HART CEO
- Alberto Rosania, Chariman, AnsaldoBreda
- Alan Wulkan – HDR/Infraconsult – Senior Vice President
- Simon & Lorraine Zweighaft – HDR/InfraConsult – Senior Vice President

Monday, May 27th (Memorial Day USA)

07:45 Lorenzo Garrido and Rainer Hombach Arrive GVA.

10:00 Arrive UITP Expo: Meet with AnsaldoBreda Executives at their display and preview HART vehicle mockup.

- Alberto Rosania, Chariman
- Maurizio Manfelotto, CEO
- Andrea Pepi, Exec Sr. VP
- Alessio De Sio, Sr. VP External Relations
- Bruno Tasselli, VP Sales
- Arcangelo Fornelli, VP Business Development
- Giampaolo Nuonno, VP Program Management
- Giulio Caione, Program Management
- Francesca Sarnataro, External Relations, Communications & Media

11:00 Attend UITP Expo Forum 2: Communication Based Train Control.

13:00 Lunch

14:00 Review and meet with industry suppliers: Fare collection and platform gates.

16:00 Attend UITP Expo Forum 5: New Fare Collection Technology.

18:00 Depart UITP Expo.

Tuesday, May 28th

10:00	Arrive UITP Expo: Further review and meetings with industry suppliers for fare collection.
12:00	Lunch
13:00	Meeting with AnsaldoBreda executives to discuss project status. (Display Office) - Alberto Rosania, Chairman - Maurizio Manfelotto, CEO - Andrea Pepi, Exec Sr. VP - Alessio De Sio, Sr. VP External Relations - Giampaolo Nuonno, VP Program Management - Giulio Caione, Program Management
14:00	Attend UITP Expo Forum 9: Integrated Payment and Passenger Information.
16:00	Public Presentation of HART vehicle mockup.
18:00	Depart UITP Expo.

Wednesday, May 29th

09:00	Depart Hotel for GVA
11:00	Fly GVA>CPH
14:00	Arrive CPH
15:00	HART Platform Screen Gate Change Order Review Meeting with Ansaldo Honolulu Joint Venture (AHJV) representatives and technical representatives from Naples on video conference. - Enrico Fontana, Project Manager, AHJV - Valentina Legrottaglie, Systems Manager, AHJV - Antonio Cervone, Senior Engineer, AnsaldoSTS
18:00	Transfer to Hotel

Thursday, May 30th

08:00 Depart for AnsaldoSTS CityRingen Project Office

09:00 Meeting with AnsaldoSTS Executives and Presentations (attached):
- Copenhagen Metro in operation
- CityRingen Project

- Francesco Di Maio, Sr. VP
- Ulderigo Zona, VP Construction & Commissioning
- Piero Marotta, VP Operations & Maintenance
- Salvatore Tedesco, CityRingen Project Engineer
- Michele Cicognani, Sr. Project Engineer
- Alessandro Chiappini, O&M Engineer

11:00 Visit CityRingen MSF Construction Site

12:00 Transfer to Metro Service Facility in operation

12:30 Lunch at Service Facility Canteen

13:30 Tour Control Center and Maintenance Facility

15:30 Meeting with Metroselskabet
- Ms. Anne-Grethe Foss, CEO
- Chris Cox, Operations Manager

17:00 Follow Up discussions with AnsaldoSTS Executives

19:00 Depart to CPH

21:00 Fly CPH>LIN

23:00 Arrive LIN

Friday, May 31st

08:00	Depart Hotel
09:30	Arrive Metro Brescia
10:00	Brescia Project Meeting and Presentation with AnsaldoSTS Executives (attached) - Francesco Di Maio, Sr. VP - Domenico Lanciotta, VP Engineering - Ulderigo Zona, VP Construction & Commissioning - Salvatore Liccardi, Commissioning - V. Carfora, Project Manager Brescia O&M - G. Magro, Project Manager Brescia DB
11:00	Tour of Depot and Operations Control Center
12:00	Tour Metro Brescia system in operation
13:00	Lunch
14:00	Meeting with Metro Brescia Owners - Adriano Piroli, Mayor of Brescia - Alessandro Triboldi, Brescia City Manager - Ettore Fermi, Chairman Metro Brescia Board of Directors
16:00	Meeting with Sergio De Luca, Ansaldo STS CEO (HART CEO only)
18:00	Depart for Hotel

Saturday, June 1st

09:00	Tour Milan METRO Line 5
12:00	Lunch
13:00	Depart for Milan Main Train Station
15:10	Freciarossa High Speed Train, Milan>Florence
16:55	Arrive Florence Main Train Station
17:30	Arrive Hotel

Sunday, June 2nd

09:00	HART Management Draft Findings Report Meeting
12:00	Lunch

Monday, June 3rd

08:00 Depart Hotel

09:00 Arrive AnsaldoBreda Factory in Pistoia

09:30 AnsaldoBreda Meeting and Presentation (attached)
- Andrea Pepi, Executive Sr. VP
- Giampaolo Nuonno, VP Program Management
- Marco Sacchi, Director of R&D
- Giulio Caione, Program Management
- Luigi Accardo, Project Engineer

12:00 Lunch

13:00 Facility Tour led by Maurizio Manfelotto, CEO, AnsaldoBreda

16:00 Wrap up meeting with AnsaldoBreda Executives
- Andrea Pepi, Executive Sr. VP
- Giampaolo Nuonno, VP Program Management
- Marco Sacchi, Director of R&D
- Giulio Caione, Program Management
- Luigi Accardo, Project Engineer

17:00 Depart for Hotel

18:00 Arrive Hotel

Tuesday, June 4th

7:00 Depart Hotel – Return to Honolulu

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Copenhagen Metro

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Map of the System

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Contractual Scope of Work

Phase 1+2

Metroselskabet

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- System Integration
- 34 Trains
- CW Control & Maintenaince Center
- Design & Build Technological Sub-systems
- 5 + 3 years of O&M
- 5 years new O&M contract
- 770 M€ and 1300 milestones

COMET

Carillion/SAE/Astaldi/NC

- Civil Works: Tunnel, Viaducts, Embankments
- Station Subsystems: Lighting, Lifts, Elevators,
- Tunnel Ventilation System

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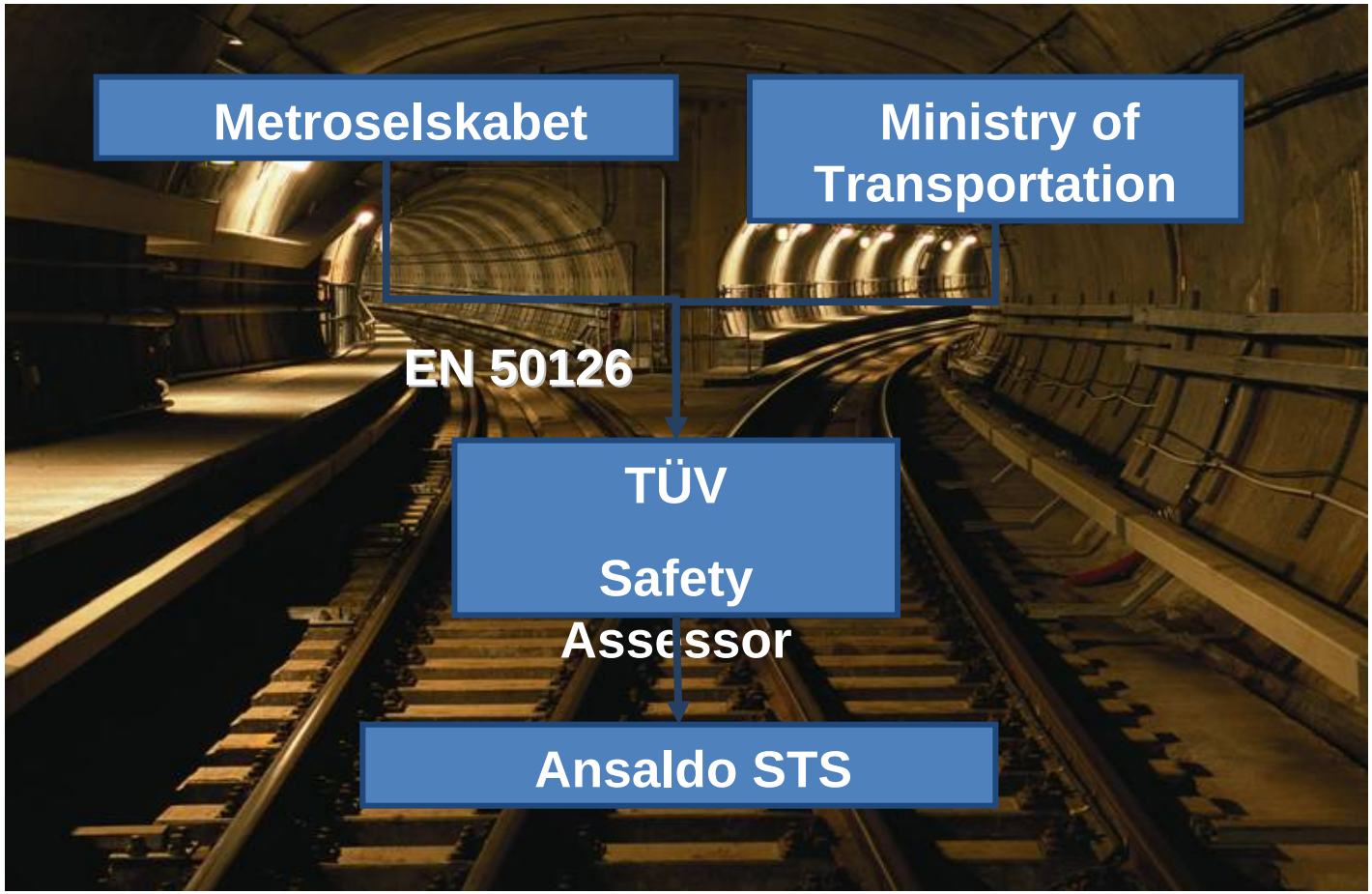
Certification Process



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Supply / O&M - Integration

Supply
1996 - 2002 - (6y)

Ph. 2a
½ y

Ph. 2b
½ y

Ph. 3
2007

Oct 96

Mobilization
1999 – 2002 - (2,5y)

Sep 07

Oct 02

Operation & Maintenance
2002 – 2015 - (13y)

Dec 15

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Performance - Key Figures

Headway minimum – peak hours:	2 min.
Headway minimum – night service:	15 min.
Min. Design Headway:	1 min.
Capacity: 300 passengers per train, (with operation headway of 1,5 min.)	12,000 pphpd
Commercial speed (including stops):	38 km/h
Maximum speed:	80 km/h
Service around the clock (24/24 h.)	
Stations and vehicles unmanned	
Service Availability	98% (monthly)

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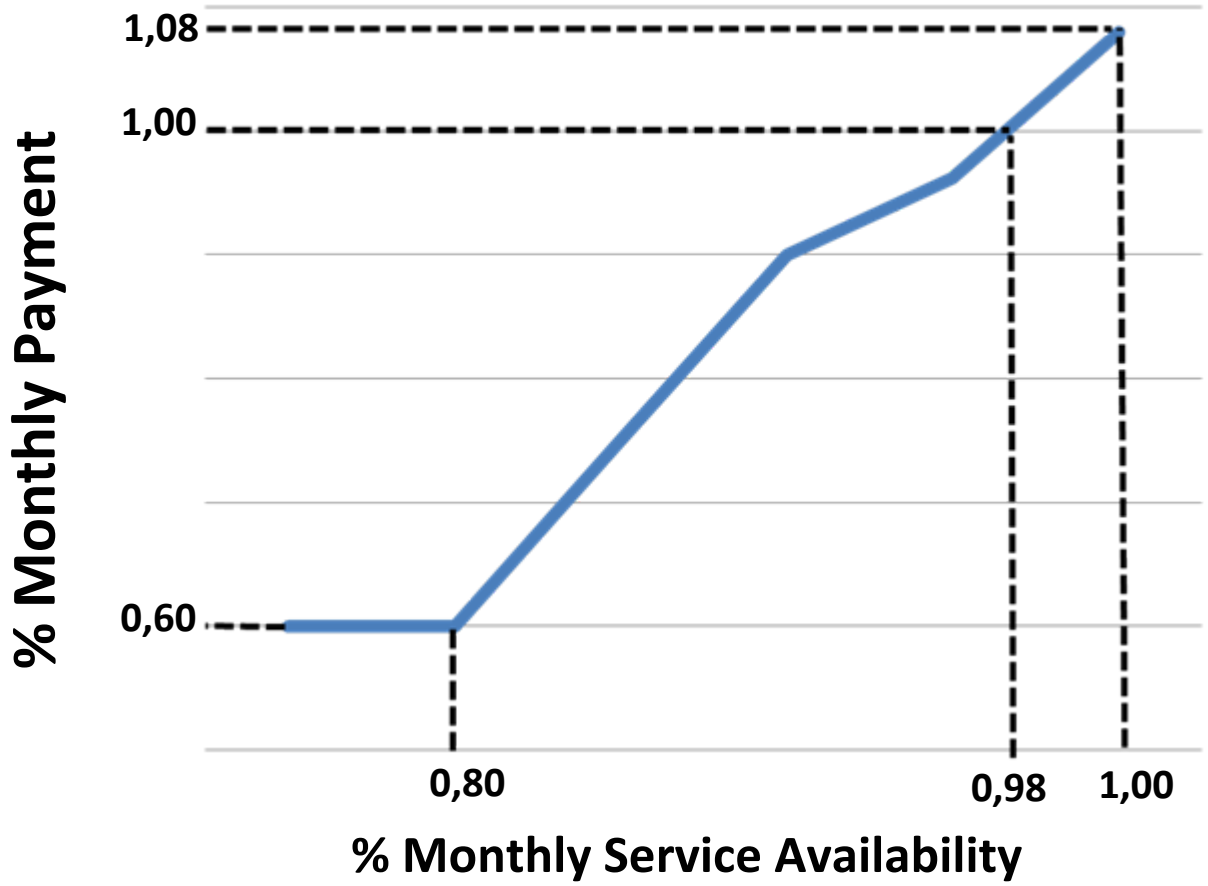
Bonus and Penalties: Service Availability



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Service Availability trend in the last years

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List of main Subsystems

- ATC
- Rolling Stock
- Passenger Information System
- Telecommunications, Radio System
- SCADA
- Power Supply & Traction Power
- Control & Maintenance Center
- CMC Equipment & Service Vehicles
- Platform Screen Doors
- Obstacle Detection System
- Permanent Way

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Automatic Train Control

A.T.P. (Automatic Train Protection)

Prevents train collisions and derailment

A.T.O. (Automatic Train Operation)

Control of movement and stopping of trains

A.T.S. (Automatic Train Supervision)

Direction of train according to schedule

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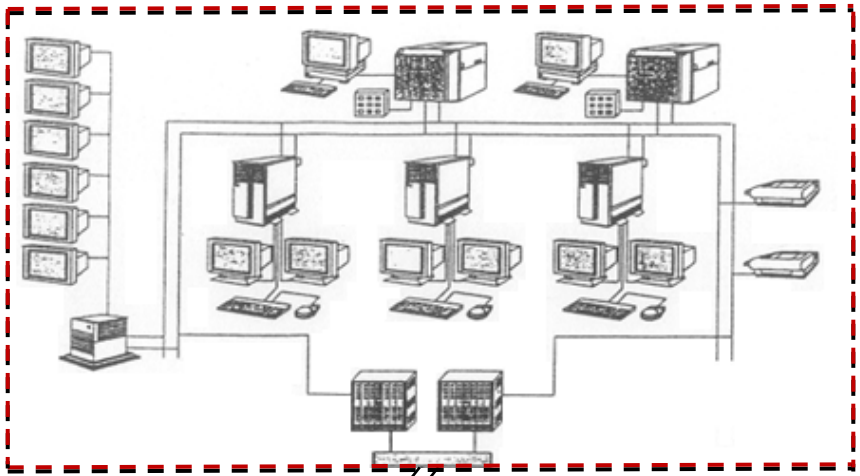
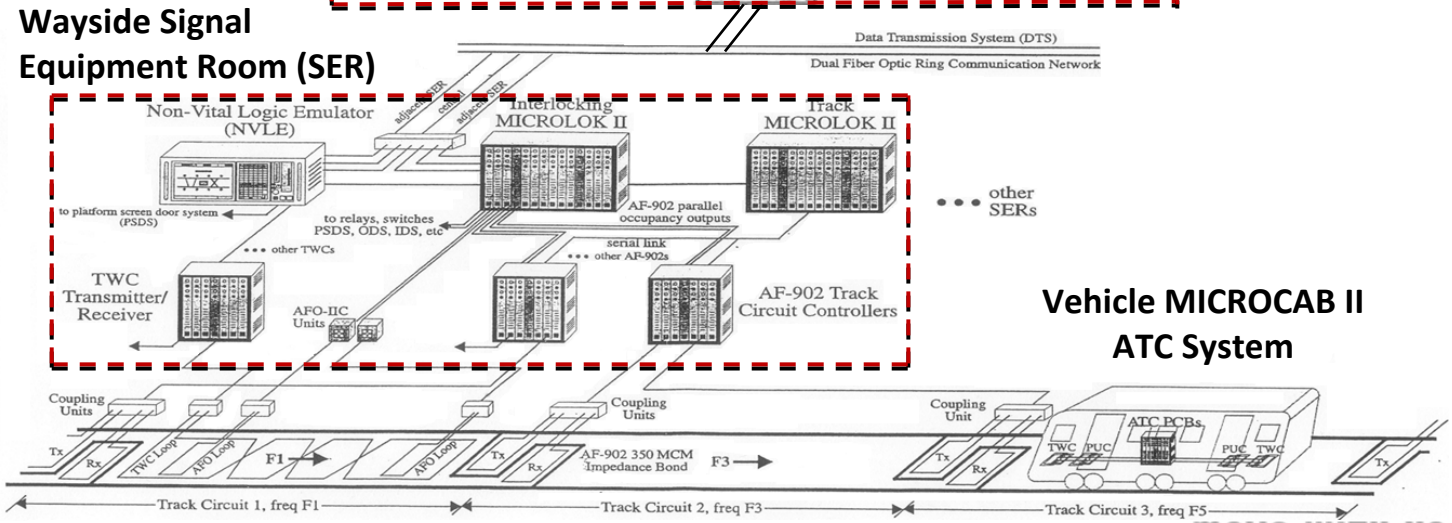
ATC Architecture

Central ATC System (non-vital)



Wayside Signal Equipment Room (SER)



Vehicle MICROCAB II ATC System

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ATC Functions

Major Central ATC Functions:

•Automatic Train Supervision (ATS)

•Control and Display

•Vehicle Regulation

•Reports and Alarms

•TWC Functions

•Emergency Stop Requests

•Note: Safety of Central control functions ensured by Wayside and/or Vehicle ATP

Major Central ATC Functions:

•Speed Limit Reception/Decoding

•Determine Speed

•Vehicle Overspeed Protection

•Brake Assurance

•Propulsion/Braking Interface

•Door Control

•ATP Failover

•Automatic Coupling/Uncoupling

•Vehicle Direction Control

- Automatic Train Operation (ATO)
- Train-to-Wayside Communication

Major Wayside ATC Functions:

- Train Detection
- Speed Command Transmission
- Interlocking Control
- Speed Restrictions
- Berthing
- Automatic Coupling/Uncoupling
- Direction Control
- Train Separation
- Emergency Stop
- Train-to-Wayside Communication
- Platform Screen Door Interface

Control and Maintenance Centre

The Control & Maintenance Centre (CMC) is placed at the terminal of line M1 and designed with sufficient capacity for all metro extensions.

The CMC area contains: Track area (for shunting, stabling, testing), control rooms, workshops, storage, offices, electrical substation.

The CMC is divided in a driverless area and a manual area.

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Control and Maintenance Centre

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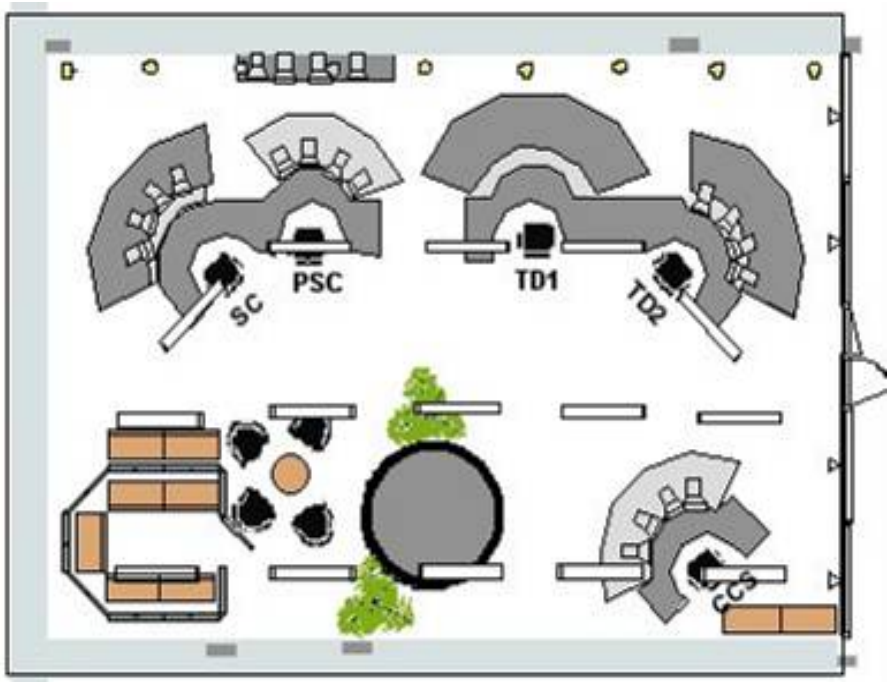
Control Room



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Passenger Vehicles

October 2002 :	**15**	**March 2005:**	**30**
May 2003 :	**19**	**September 2007:**	**34**
October 2003:	**25**		

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Passenger Vehicles

Highlights:

- 3 bodies, 4 bogies (3 motor, 1 trailer);
- Length: 39 m, Width: 2.65 m;
- 6 doors per side;
- Sliding plug doors;
- IGBT inverters (high efficiency and recovering of braking energy)

Safety:

- Electrically operated doors with sensitive edge;
- Vehicle logic co-ordinated with vital ATC (e.g. safety door interlocking);
- Fire characteristics of materials according to European standards.

Environmental:

- Low weight due to aluminium body and use of composite materials.

Passenger comfort:

- Styling by Giugiaro Design, Italy;
- Friendly, pleasing design with full external viewing windows;
- All equipment installed underframe (“clean floor” concept).

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PS&IS

PID

Public information displays for passenger info

PA

Public announcements between control room and passenger

ECP

Emergency call system in stations and trains

CCTV

Video transmission from stations and video recording in trains.

Radio System – TETRA system

allows voice communication and ATC data transmission

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SCADA

It allows the Control Room operators to monitor, supervise and remote control of:

- PS&TP system
- Station and CMC auxiliary equipment
- ODS
- PSDS
- Train auxiliary equipment

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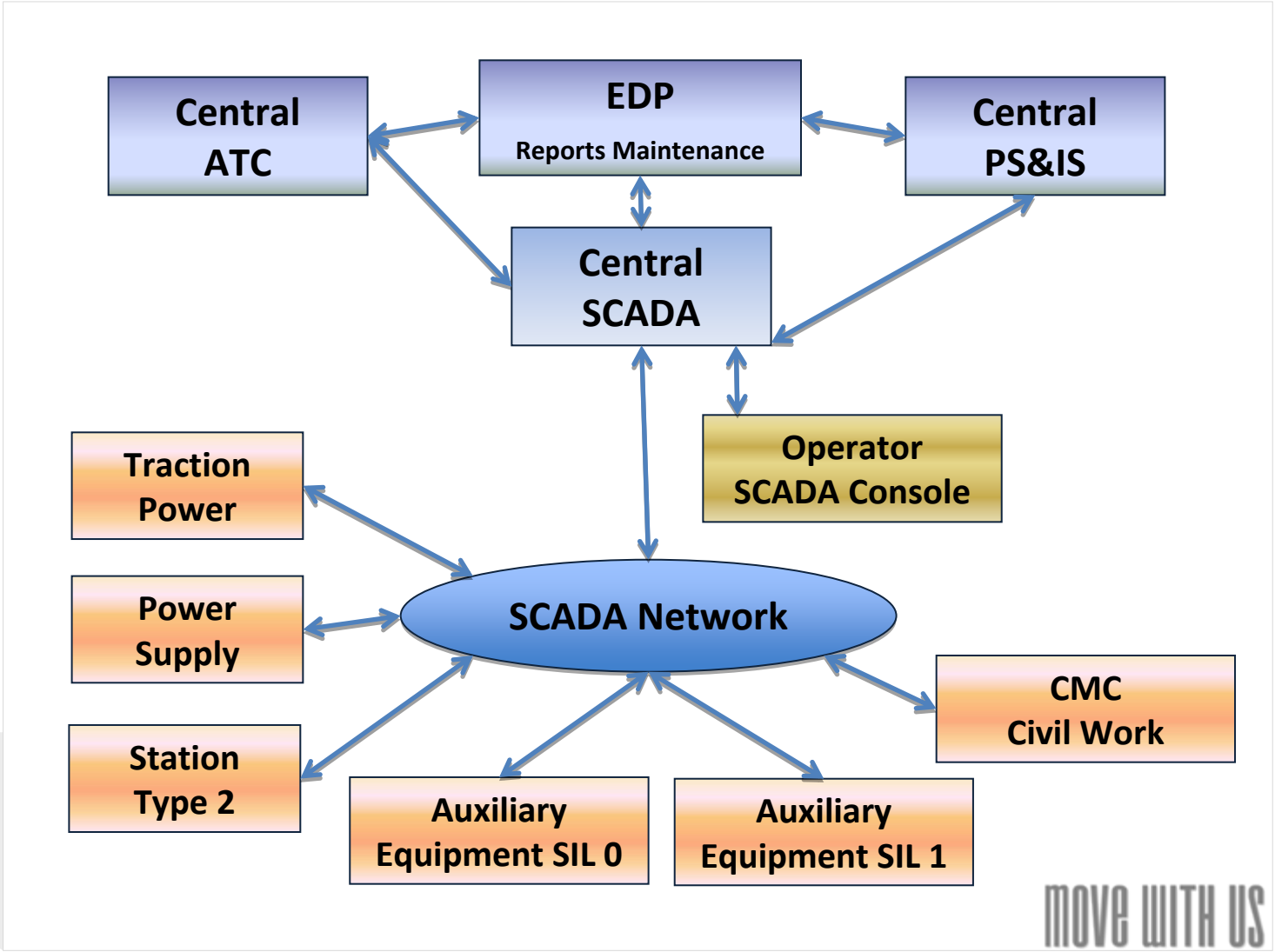
SCADA



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Platform Screen Doors

9 underground stations are equipped with PSDS

The system provides 12 doorways per station

It permits to:

- Improve safety
- Improve passenger environment
- Enhance passenger management
- Architectural integration

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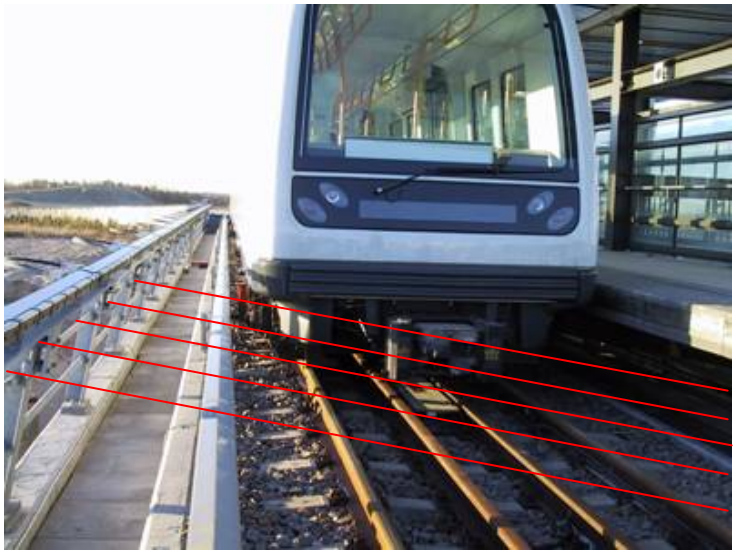
Obstacle Detection System

Infrared – Phase 1
(5 stations)



Laser – Phase 2B+3
(7 stations)

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Automatic Platform Gate

Due to the recurring interruptions of the normal operation caused by the ODS system, in the above ground stations Automatic Platform Gates will be installed.

Back-up Power Facilities

In case of black-out the UPS powers the following subsystems for a minimum of 2 hours:

- ATC
- SCADA
- PSDS

The following sub-systems are powered by UPS for minimum 4 hours:

- Radio & Transmission
- PS&IS
- Control Centre

The vehicles are only provided by UPSs which power the onboard auxiliary equipments for half hour.

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Interface Issues

SCADA

•The PLC were supplied separately (for CW equipment and TS equipment) and they were not fully compatible;

•This creates performance issues at overall SCADA system level (update of status at least every 2 s).

•Interface agreement had to be issued as VO for TS

Electrical loads:

•The power transformers supplied by TS had also to feed the CW loads (lifts, escalators, emergency ventilation);

•The TS transformers had to be oversized due to CW extremely conservative power demand figures; the emergency ventilation fan had a start-up current 5 times the normal one (the electrical motors were not provided with electronic drive) causing unacceptable voltage drop. The cabling had to be oversized and max one fan every 15 s could start.

•Client had to issue a VO to TS

Stray current protection system:

•The design was in TS scope while the supply and installation in CW scope;

•The CW did not follow TS design input (interconnection of rebars in the first concrete of the track bed);

•Client had to issue a VO to TS to install additional interconnected rebars (not needed structurally) in the second stage concrete (to guarantee a sufficiently low resistance path).

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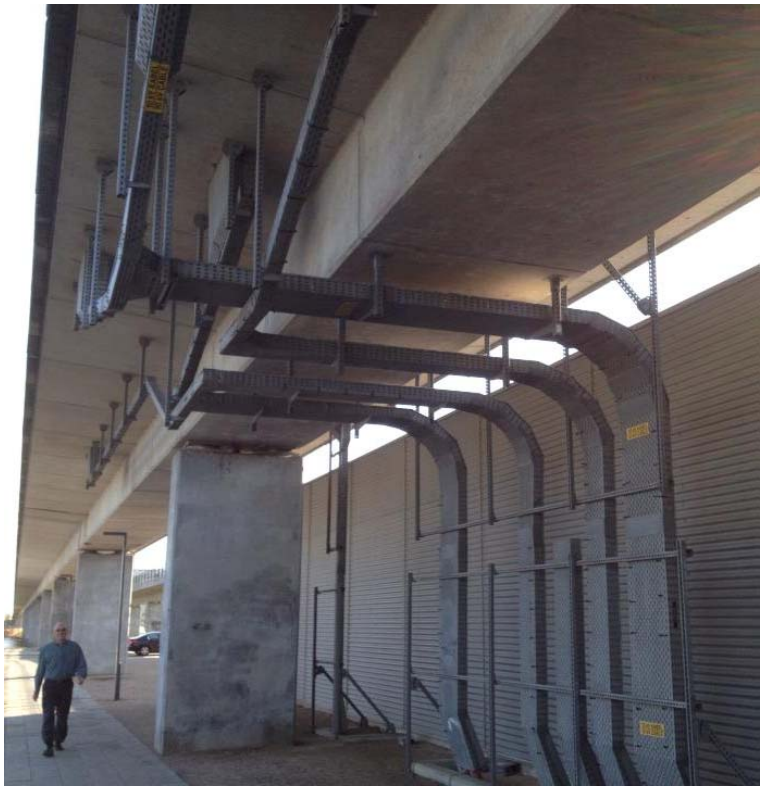
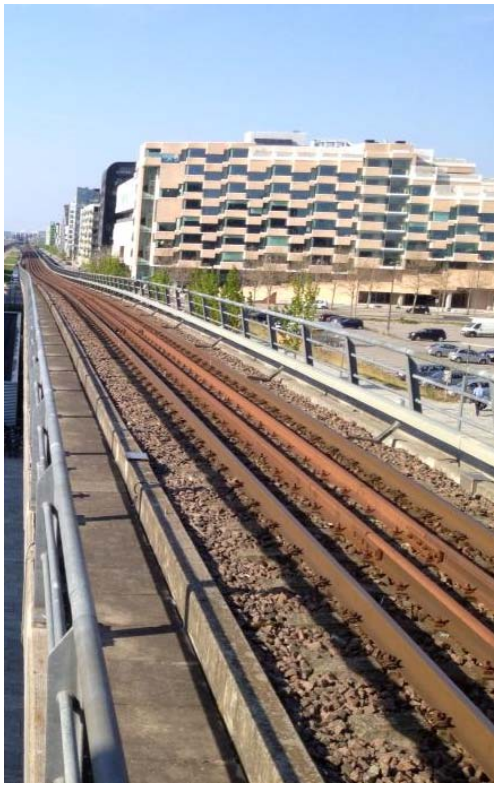
Other station and line's details

Cabling and duct system





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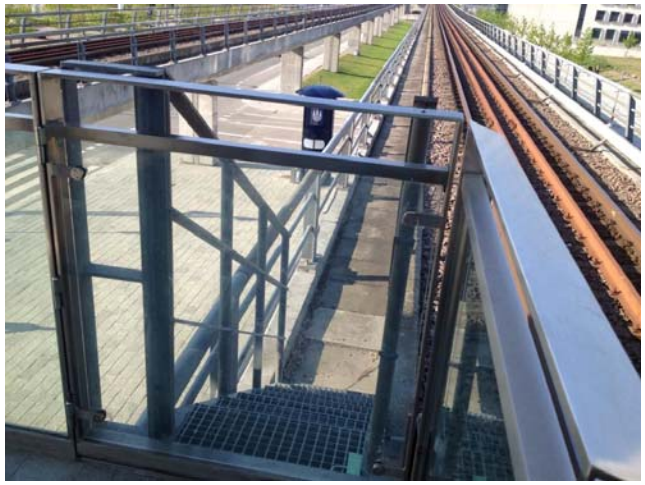
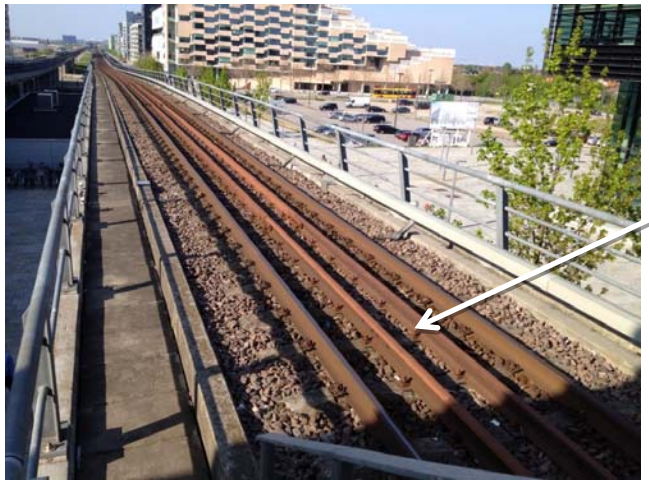
Other station and line's details



Line Emergency Way



Derailment containing rails

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Other station and line's details

All Copenhagen Metro stations are provided with escalators and elevators.

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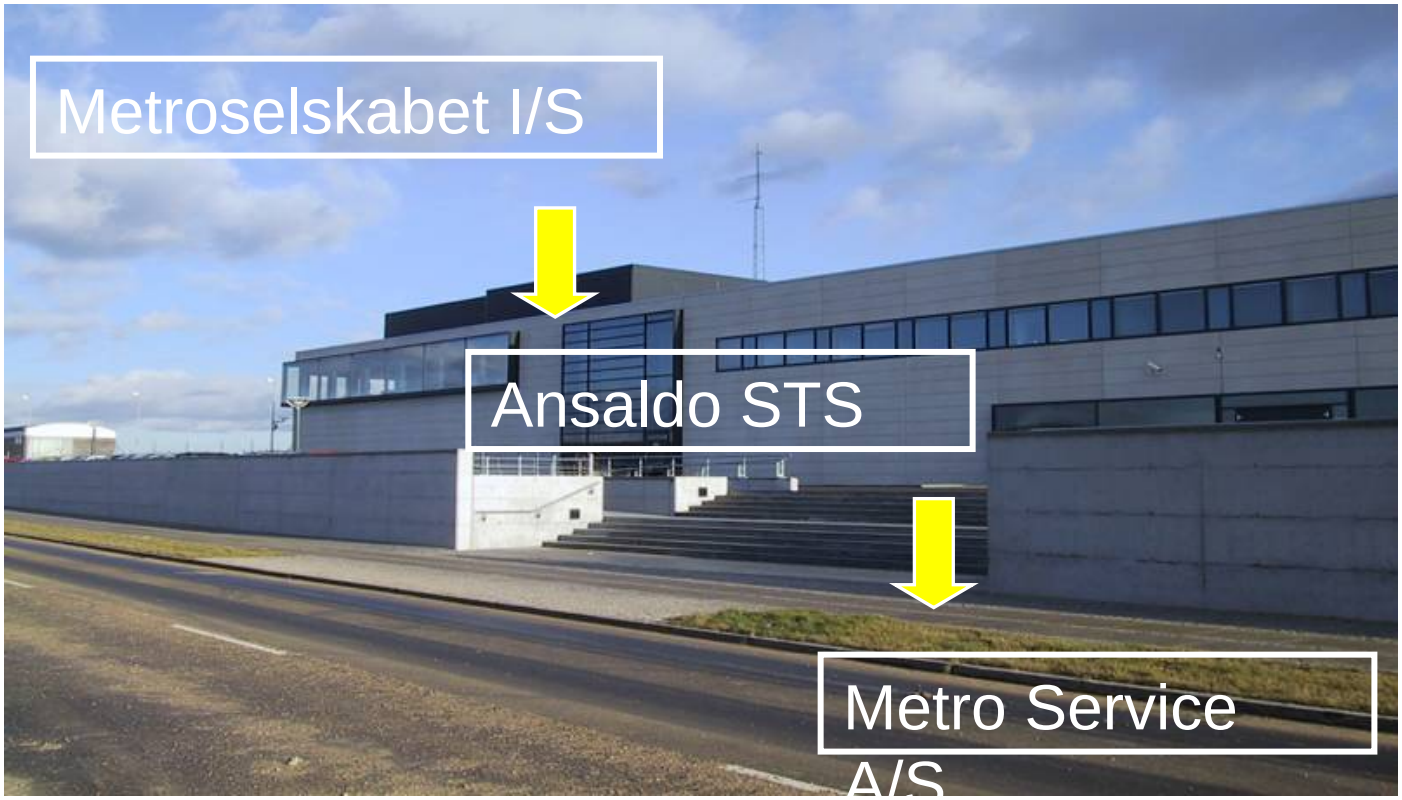
Operation & Maintenance



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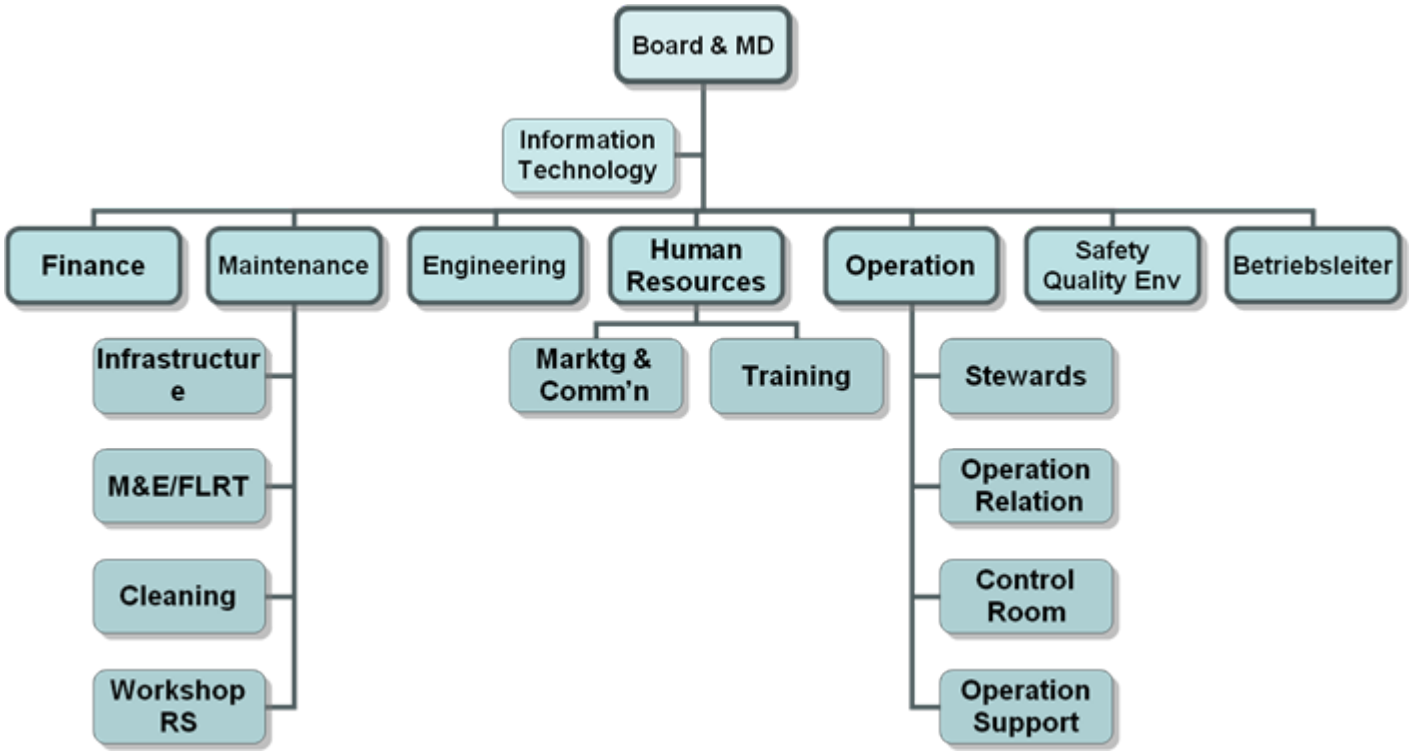
Metro Service Organization Chart



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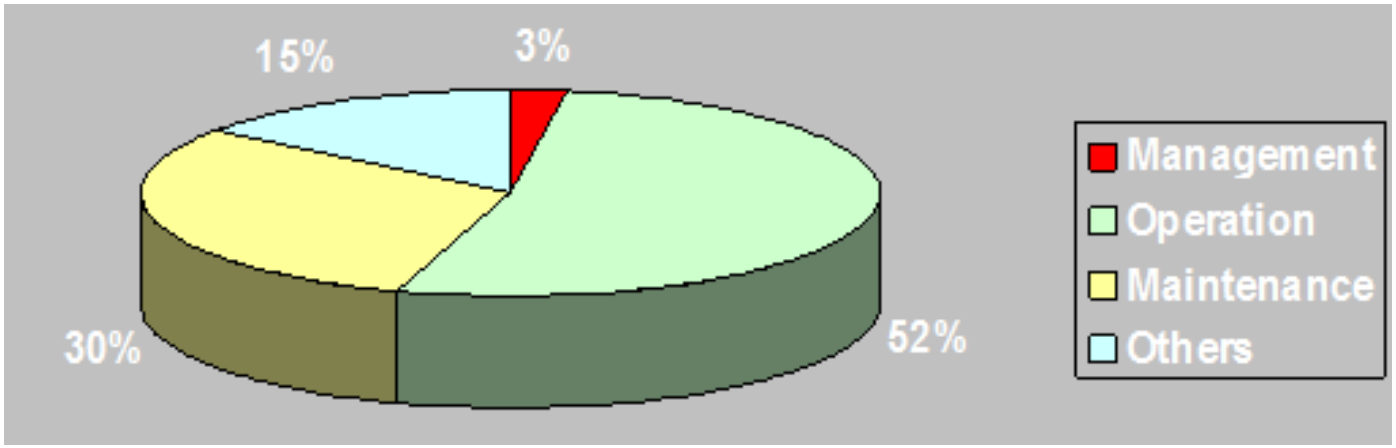
Metro Service Staff Division



Total Staff : 280

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Maintenance

Maintenance (preventive and corrective) is:

•performed in accordance with the description contained in the relevant maintenance manuals;

•performed in accordance with the applicable safety rules for the respective areas, and on the whole in compliance with the Metro's safety policy;

•documented and reported in the Maintenance System.

The maintenance is performed during night hours closing sections of the line according to a defined plan. The operation continues in compliance with work-zones implementing a alternative passenger services (Shuttle or Short Turn-back).

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24/7 Maintenance Principles

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13 Weeks Pattern for Track Access

Scenarios	Week A					Week B					Week C					Week D				
	Mon	Tue	Wed	Thu	Fri	Mon	Tue	Wed	Thu	Fri	Mon	Tue	Wed	Thu	Fri	Mon	Tue	Wed	Thu	Fri
1					X										X					
2												X								
3		X	X										X							
4				X																
5														X						
6										X										X
7							X													
8								X									X	X		
9									X											
10																			X	
11	X										X									
12						X														
13																X				

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Modifications to the infrastructure after start of operation

Any change to system configuration is managed through O&M Change Request .

The O&M CR has to be approved by the Original Designer, the Operator, the Owner and authorized by the Authority (if safety relevant also assessed by an Independent Assessor).

The O&M CR includes:

•Description of the proposed change;

•Reason for the Change;

•Description of the impact on Safety, RAM and other sub-systems;

•Description of the procedure to implement the change with the system in operation;

•Description of the V&V activities (e.g.tests);

•Description of the training and the documentation to be revised.

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Cityringen Project

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About Cityringen

Cityringen shall be a fully automated driverless metro ring line under the central part of Copenhagen.

The line shall consist of:

- two single track tunnels each approximately 16km in length,
- 17 underground stations with island platforms,
- 3 crossover facilities,
- 3 construction and ventilation shafts,
- an automated control and maintenance centre CMC.

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About Cityringen

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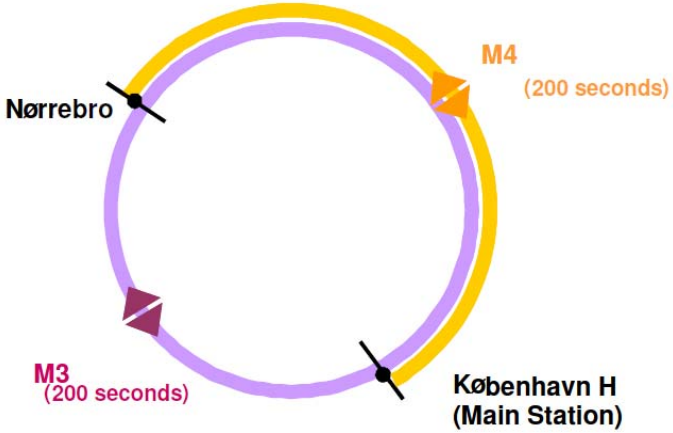
About Cityringen

Cityringen shall be fully independent of the existing metro.

Cityringen shall operate 24 hours/7 days a week with a planned operational headway of approximately 100 sec during rush hours in the central area where M3 overlaps M4 line.



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Contractual Scheme

In January 2011 the Employer has assigned two contracts:

- Civil Works Contract to CMT (Copenhagen Metro Team: Salini, Tecnimont, Seli);
- Transportation System Contract to ASTS that includes:
  - CMC Civil Works,
  - Transportation System with Vehicles,
  - Operation and Maintenance for 5 years.

CW-TS-CCB Common Basis

These two contracts have a common set of Employer's specifications related to:

- Administrative Requirements,
- System Requirements,
- Process Requirements and Management.

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Contract Price

ITEM	PRICE [€]
Supply	517.097.920
Stipulated extra works	-23.480.000
Sum of selected Options introduced during contract negotiation	-10.076.922
Sum of non selected Elective Items	-16.146.340
Variation Orders	-7.267.869
Change Request Shunting Vehicles	-104.249
Claims settlement	2.256.487
Price Indexation	54.361.977
Total Supply	**516.641.004**
5 years Commercial Operation	214.948.616
Trial Run	17.493.107
Variation Orders	11.105.000
Price Indexation	17.577.171
Total O&M	**261.123.894**
Supply + O&M	**777.764.898**

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Payment Schedule

Supplies

15% of the contract value in advance, considering the index from the 1° July 2010 to February 2011
40% based on contractual milestone achievements minus the percentage of the advanced payment.
60% based on work progresses minus the percentage of the advanced payment.

Trial running

30% of the contract value after one month
30% of the contract value after two months
40% of the contract value at the milestone TRC (Trial Running Completed)

O&M (Payments will be performed on a monthly basis)

1° year € 45.266.323
2° year € 45.337.741
3° year € 45.355.111
4° year € 44.598.710
5° year € 44.390.731

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Contract Time Schedule

Milestone	Description	Date
CA	Contract Award	10/01/2011
VOC	Verification of Contract	10/05/2011
IAP	Interface Agreement Planning	10/08/2011
SLPD	System Level Preliminary Design	09/11/2011
CMC – AS	Access to Site	04/09/2011
SLDD	System Level Detailed Design	08/03/2012
CMC - SC	Substantial Completion	13/07/2015
Section 1 – SC	Substantial Completion	28/01/2016
Section 1 – SLSC	System Level Substantial Completion	16/09/2016
RHO	Ready for Hand Over	10/08/2017
TO	Take Over	10/09/2017
OC	Operator Certificate	09/12/2017
MRO	Metro Ready for Operation	10/12/2017
HB	Hand Back of Cityringen	10/12/2022

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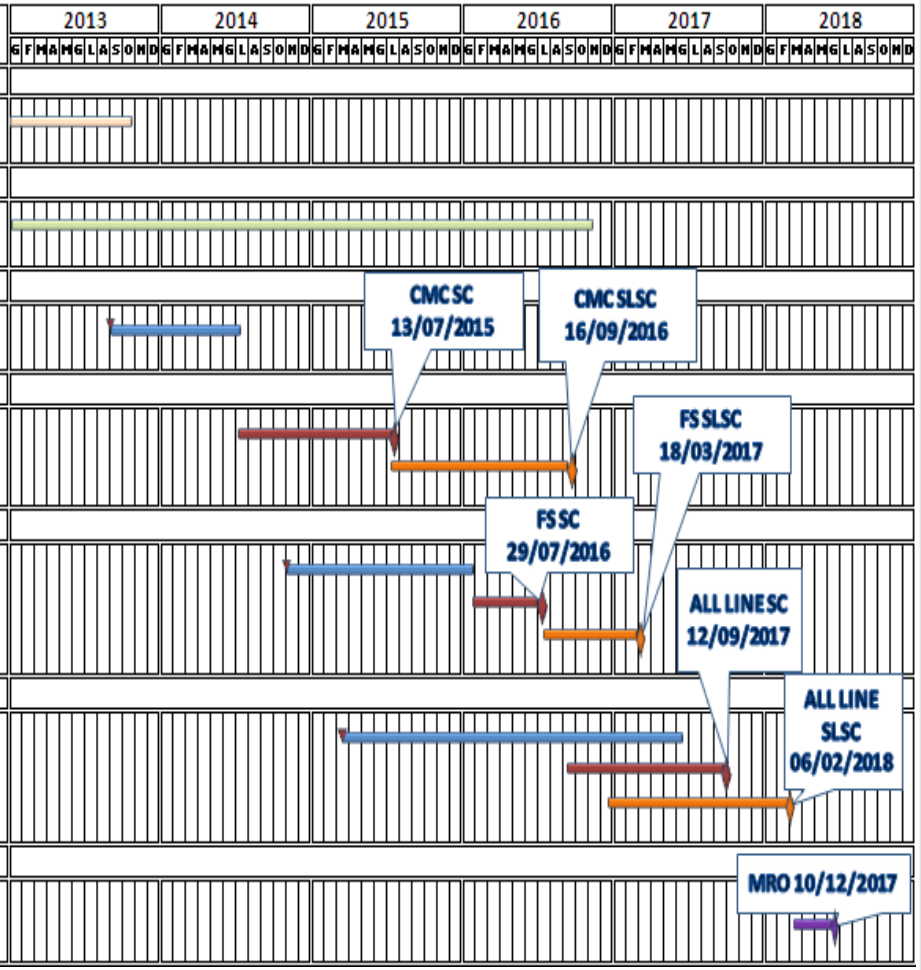
Target Time Schedule

	Start	Finish
DESIGN		
DETAILED DESIGN		Oct-13
PROCUREMENT		
RAILWAY INFRASTRUCTURE	Jan-13	Nov-16
CMC INSTALLATIONS		
INSTALLATION	13-Aug-13	18-Feb-14
CMC COMMISSIONING		
COMMISSIONING on Test Track Including RS	13-Jul-14	13-Jul-15
Integrated Tests	13-Jul-15	16-Sep-16
FUNCTIONAL SECTION		
INSTALLATION	22-Nov-14	31-Jan-16
COMMISSIONING	31-Jan-16	29-Jul-16
INTEGRATED TESTS	29-Jul-16	18-Mar-17
REST OF THE LINE		
INSTALLATION	23-Mar-15	14-Jun-17
COMMISSIONING	17-Sep-16	12-Sep-17
INTEGRATED TESTS	15-Dec-16	06-Feb-18
TRIAL RUN		
Trial Run	12-Mar-18	10-Jun-18



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Changes of contractual requirements

Change Request

A specific format to use in case of changes of design contractual requirements has been agreed with the Client. It includes the description and the reason of the change; deviations from specifications, drawings, documents; influence on time schedule, price, interface, health and safety, operational safety, O&M; possible test or procedure to be implemented and the documents that have to be modified. Once defined and agreed the change request is signed by both party.

Variation Order

In case of changes in contractual conditions (e.g. change request agreed with economical impact, changes in the contractual time schedule; etc.) a variation order is issued.

Claim

In absence of an agreement the specific issue could be referred to a third party

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Disputes

Inspection and survey by experts

If, in the case of disputes between the parties or in order to establish proof of a matter, there is a wish for inspection and survey by an appointed expert, a request thereon shall be submitted to the Building and Construction Arbitration Board in Copenhagen.

Expert opinion

At the request of a party the Arbitration Board may appoint an expert who shall be asked to give an opinion on the release of security provided and on the justification of holding back payments or making set-offs in case of disagreements between the parties.

Dispute Review Board

A Dispute Review Boards (DRB) has been established in order to facilitate cooperation between the parties by resolving disputes as quickly as possible.

Arbitration

Disputes between the parties shall be decided by the Building and Construction Arbitration Court in Copenhagen, whose awards shall settle matters finally and conclusively.

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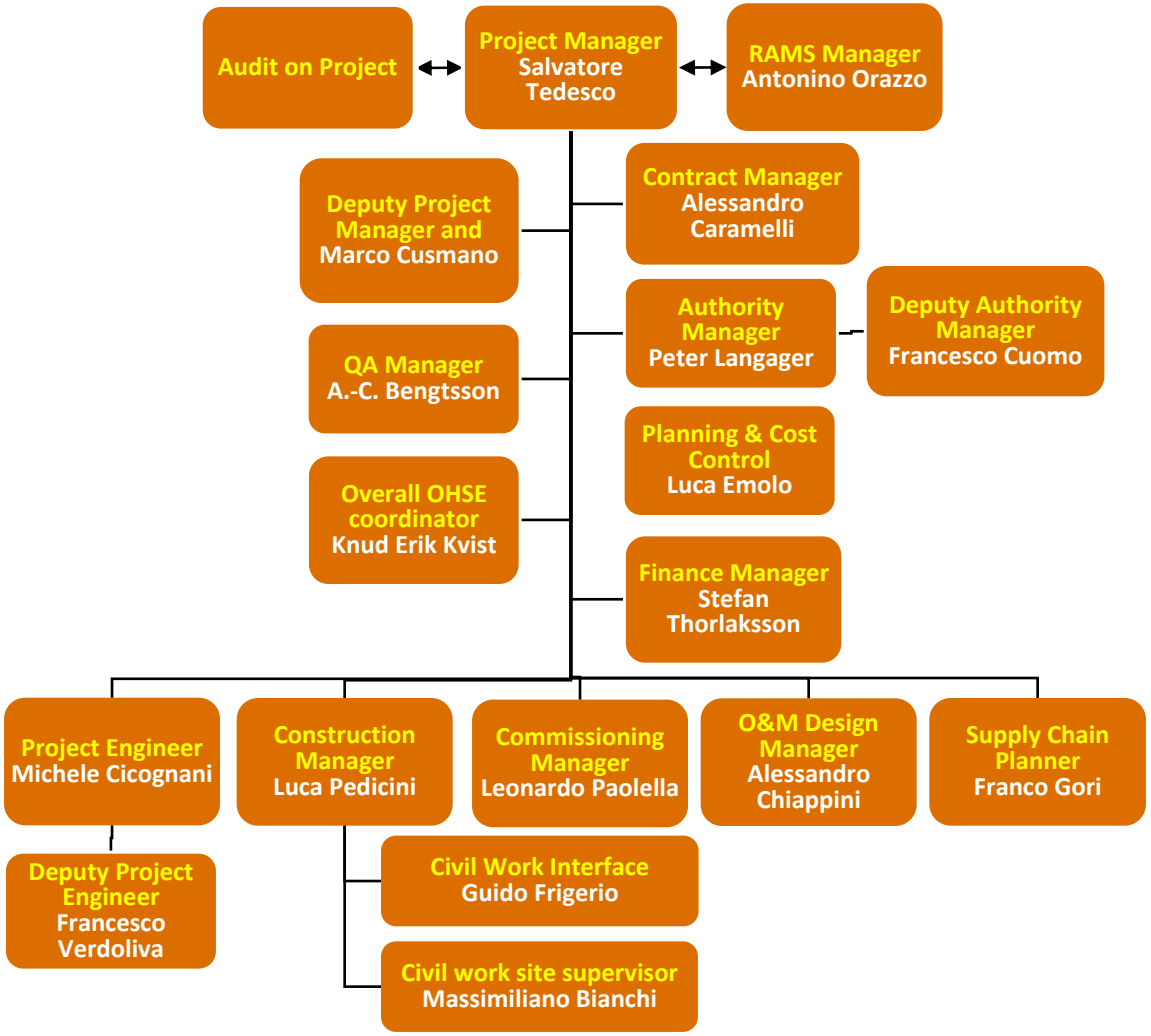
Project Team Organization



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About Cityringen

Key figures

- 16 km of double track mostly underground
- 17 stations + 1 service station
- 90,000 m² Depot (CMC)
- 2 Control Centre (Main and Emergency)
- Fleet of 28 trains
- 24/7 service
- 100 s peak hours headway
- 75 s (65 s) design headway
- 12560 pphpd at C3 load
- 98% Service Availability
- 90 km/h max speed
- 37 km/h commercial speed
- 8 + 1 electrical substations
- 750 Vdc 3rd rail traction distribution
- 10 kVac open ring distribution

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ASTS' scope of work

Railway infrastructures:

- Permanent Way;
- Traction Power;
- Power Supply;
- Automatic Train Control (CBTC);
- Platform Screen Doors;
- Passenger Security and Information System;
- Control and Data Acquisition System (SCADA);
- Control Maintenance Centre (CMC);
- Transmission System;
- Radio Communication System;
- Access Control and Intrusion Detection System.

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ASTS' scope of work

Rolling stock

- n° 28 Passenger Vehicles;
- Service vehicles (Heavy Locomotive, tunnel washing machine, .rail-road shunting vehicles, flat bed cars etc.)

CMC

- Civil works;
- Electrical and mechanical system;
- Depot equipment.

Trial run

Operation and Maintenance

- Supplies;
- Mobilisation.

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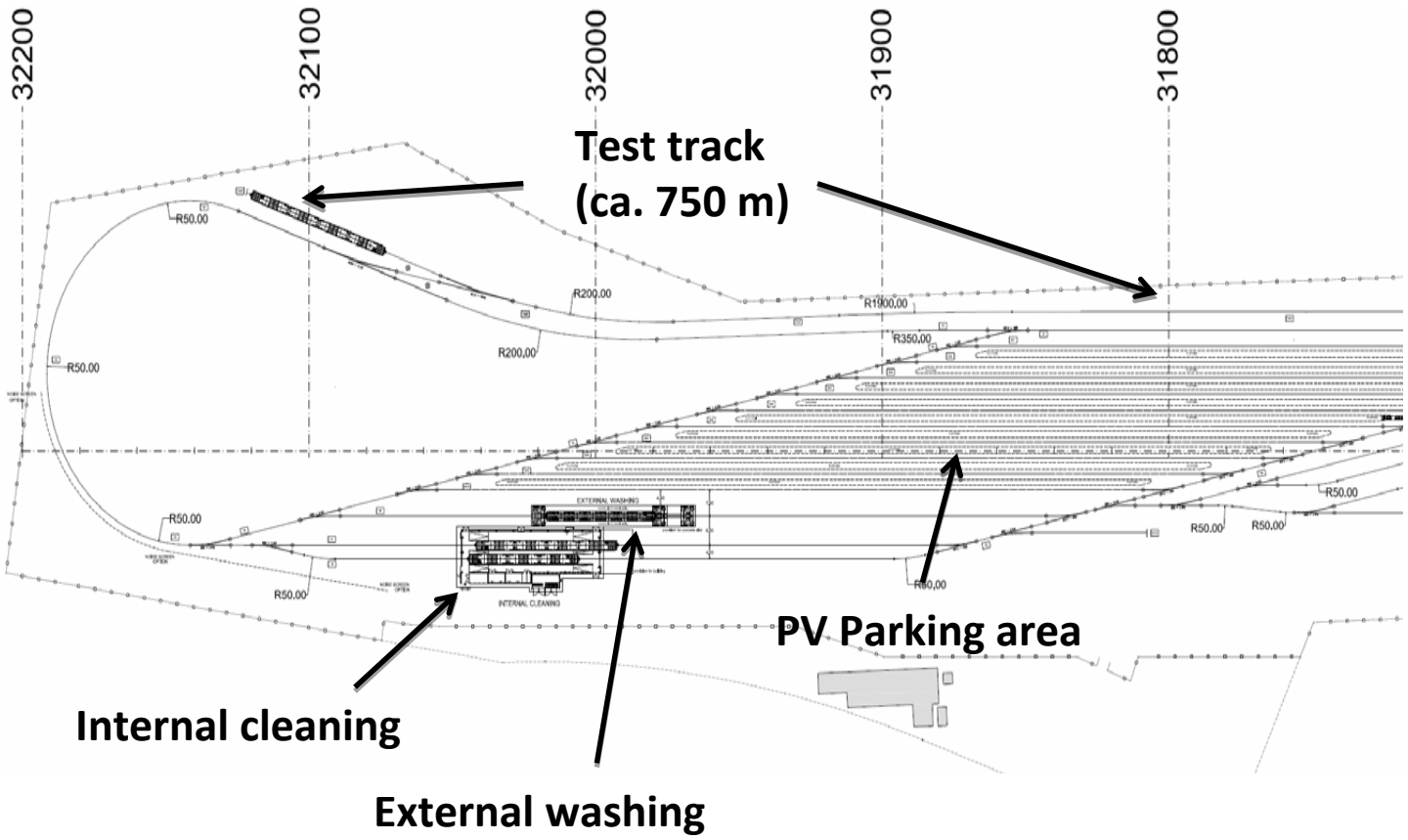
Control and Maintenance Centre



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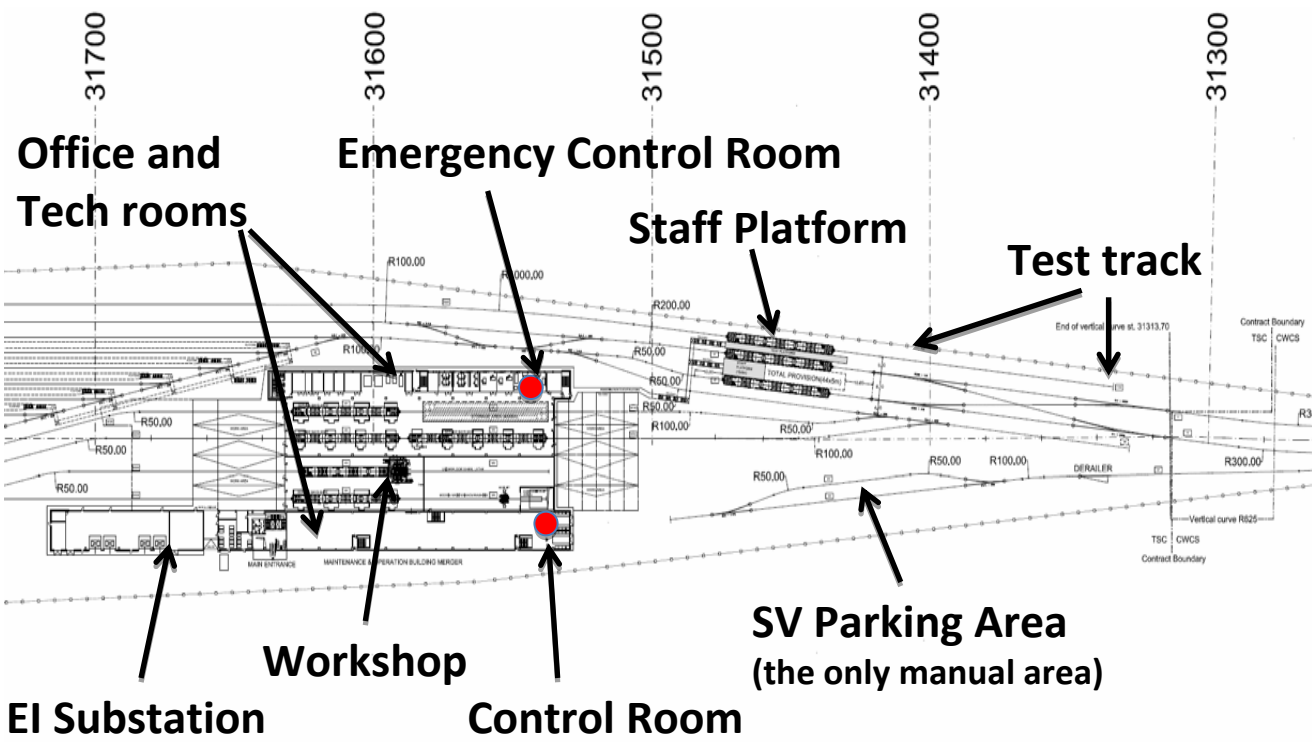
Control and Maintenance Centre



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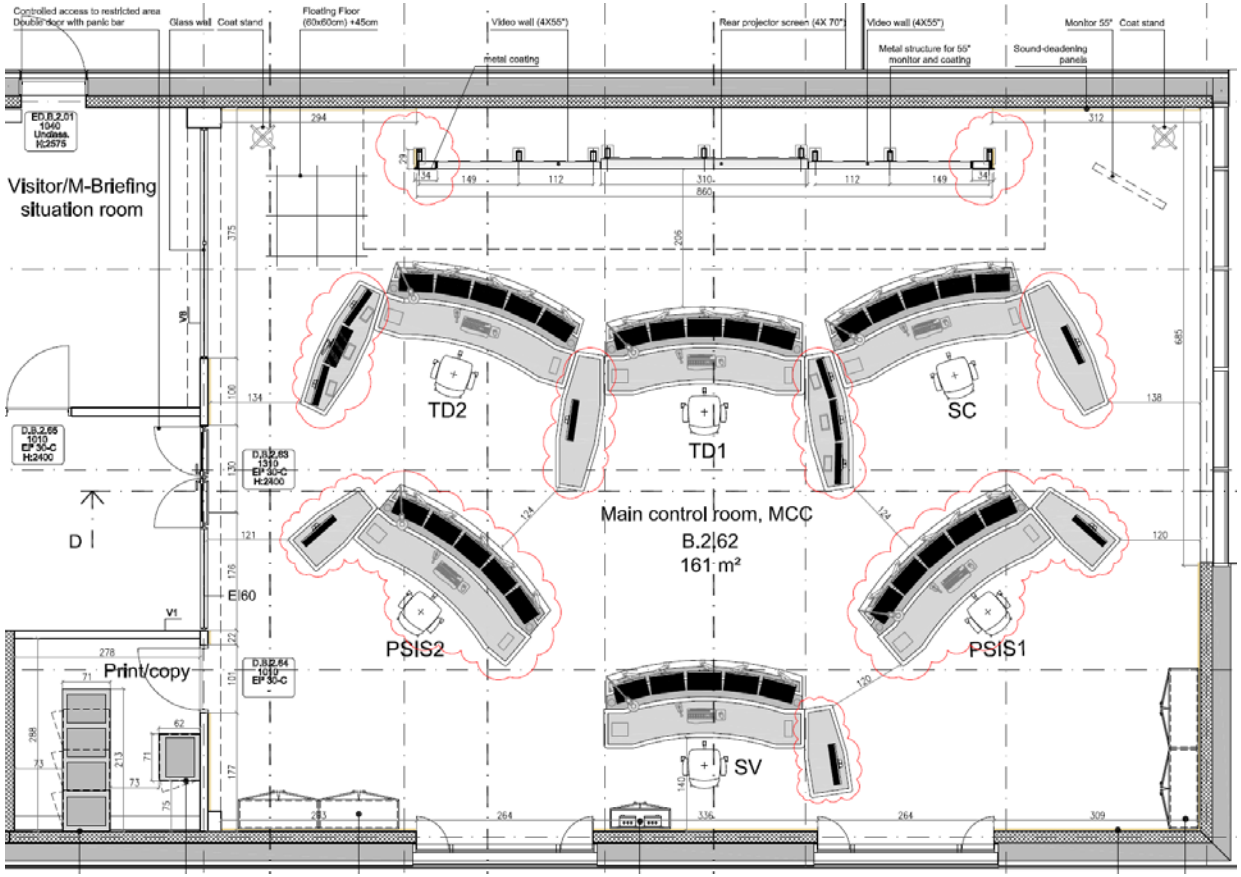
Control Centre

Main Control Room Layout



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ATC Overview

Highlights on the ATC System:

- The ATC functionalities can be decomposed in three main functional blocks:
  - ATP – Automatic Train Protection;
  - ATO – Automatic Train Operation;
  - ATS – Automatic Train Supervision.

- These functions are implemented by the following sub-systems:
  - ATS subsystem;
  - CBTC subsystem;
  - IXL subsystem.

ATP
Automatic Train Protection

- Safe train separation
- Safe protection against collisions
- Safe protection against unauthorized movement
- Safe supervision speed and direction
- Safe supervision train doors

ATS
Automatic Train Supervision

-Control and Supervision of trains
-Mission Scheduling and Planning
-Adjusts Operational Parameters
-Equipment status monitoring

ATO
Automatic Train Operation

- Operates train traction
- Operates train doors
- Operates braking system

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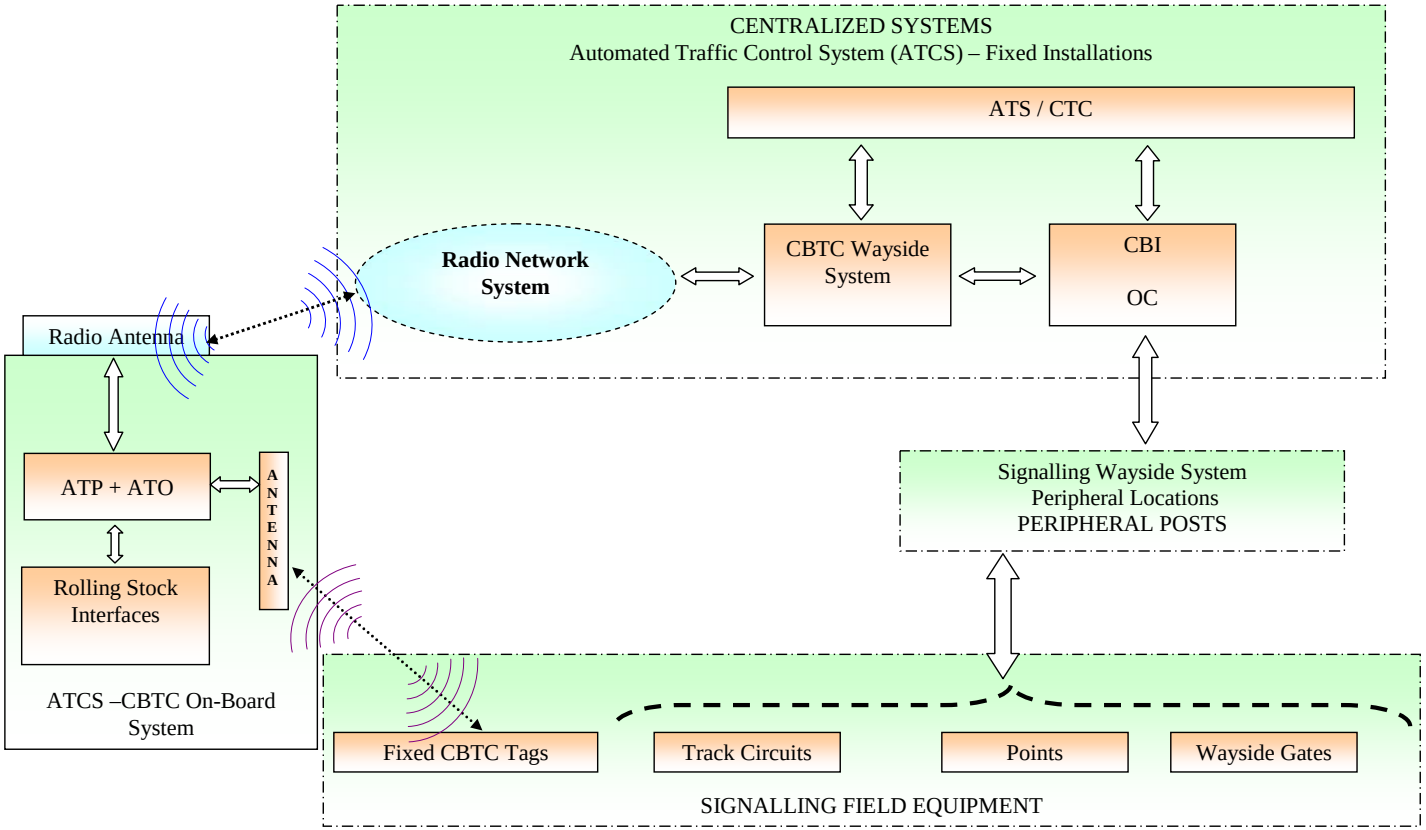
ATC – Subsystems' general interaction



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Telecommunication Overview

The Telecommunication System provides the Control Centre with the facilities:

- to supervise the passengers areas and trains,
- to provide audible and visual information to passengers both onboard and in stations,
- to provide a communication link between the Control Centre and the passengers.

The Telecommunication System includes also:

- Radio system (Tetra + WiFi) to provide a safe and reliable means of communication among control centre, trains and staff on system-wide operational and maintenance duties.
- Transmission system based on optical fibres.

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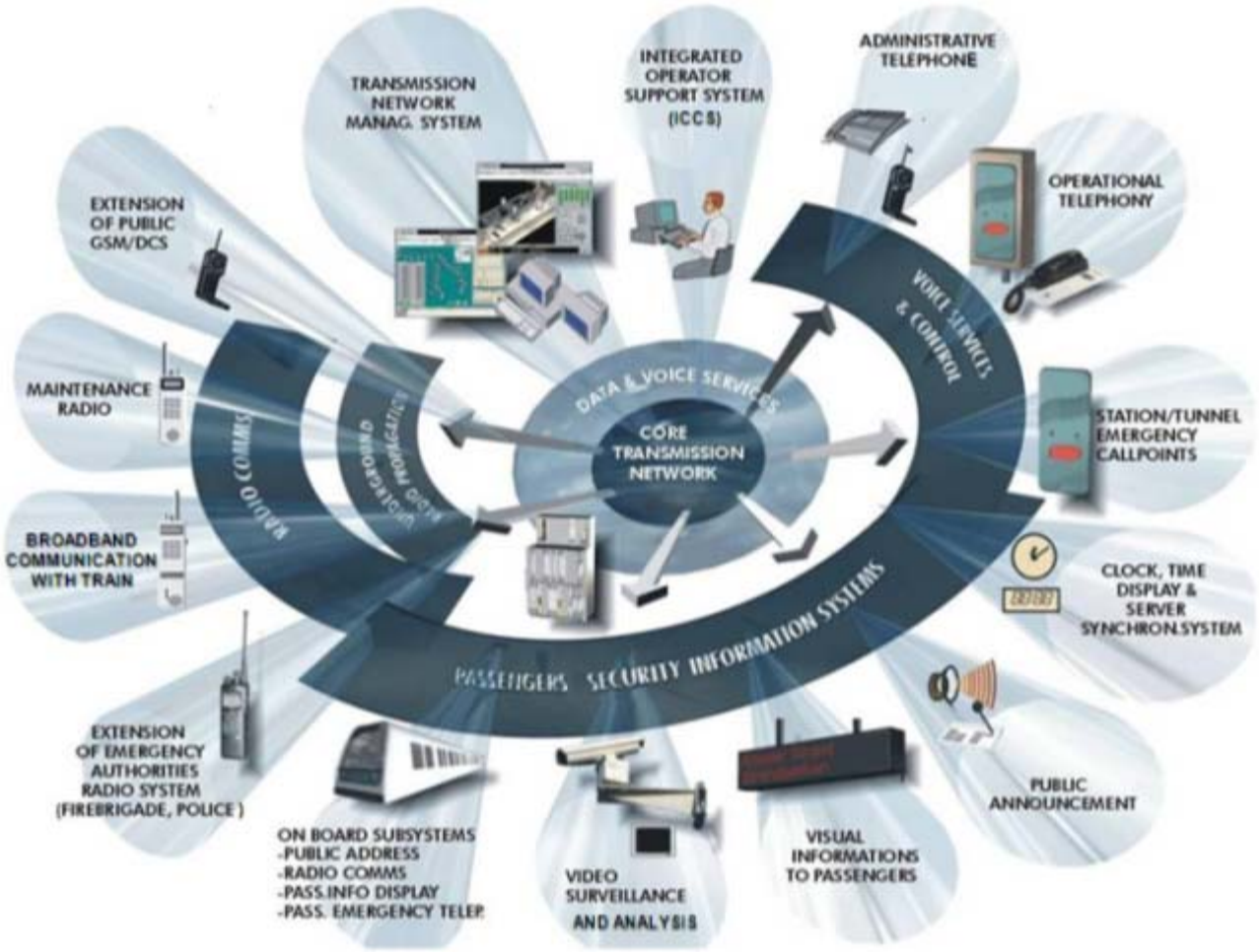
Telecommunication Overview



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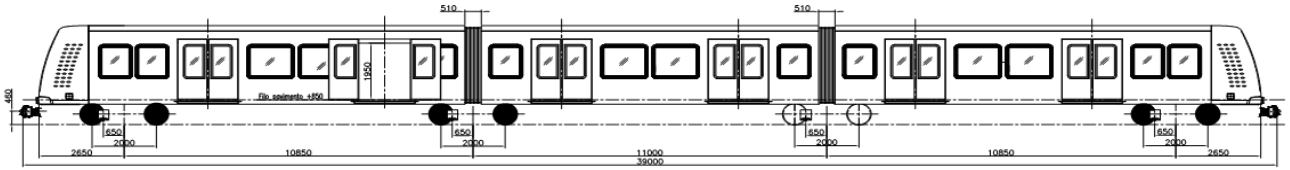
Passenger Vehicles

Train Characteristics:

- Train configuration: 3 cars
- Train length: 39 m
- Max axle load: 12.5 tons/axle
- Train Maximum Speed : 90 Km/h
- Train Maximum Speed Allowed in Manual Operating Mode : 15 Km/h
- Acceleration: 1.1m/sec2
- Average Deceleration (Service breaking) : 1.1 m/sec2
- Traction power supplied by third rail (750 Vdc)
- Carbody constructed using modern materials as extruded aluminium and welded profiles and panels
- n.3 motor bogies and n. 1 trailer bogie
- IGBT based inverter to control the motors allows the regeneration of braking energy



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Train consist future expansion

Cars

The train has been designed to allow a future expansion from 3 to 4 cars consist;

Operation

The ATC system has been designed for the possibility, with minor modifications, to manage a mixed traffic operation (3-cars and 4-cars trains); this is an advantage of the use of CBTC technology.

Civil Works

The Civil Works infrastructure is designed to not prevent the future use of 4-cars consists

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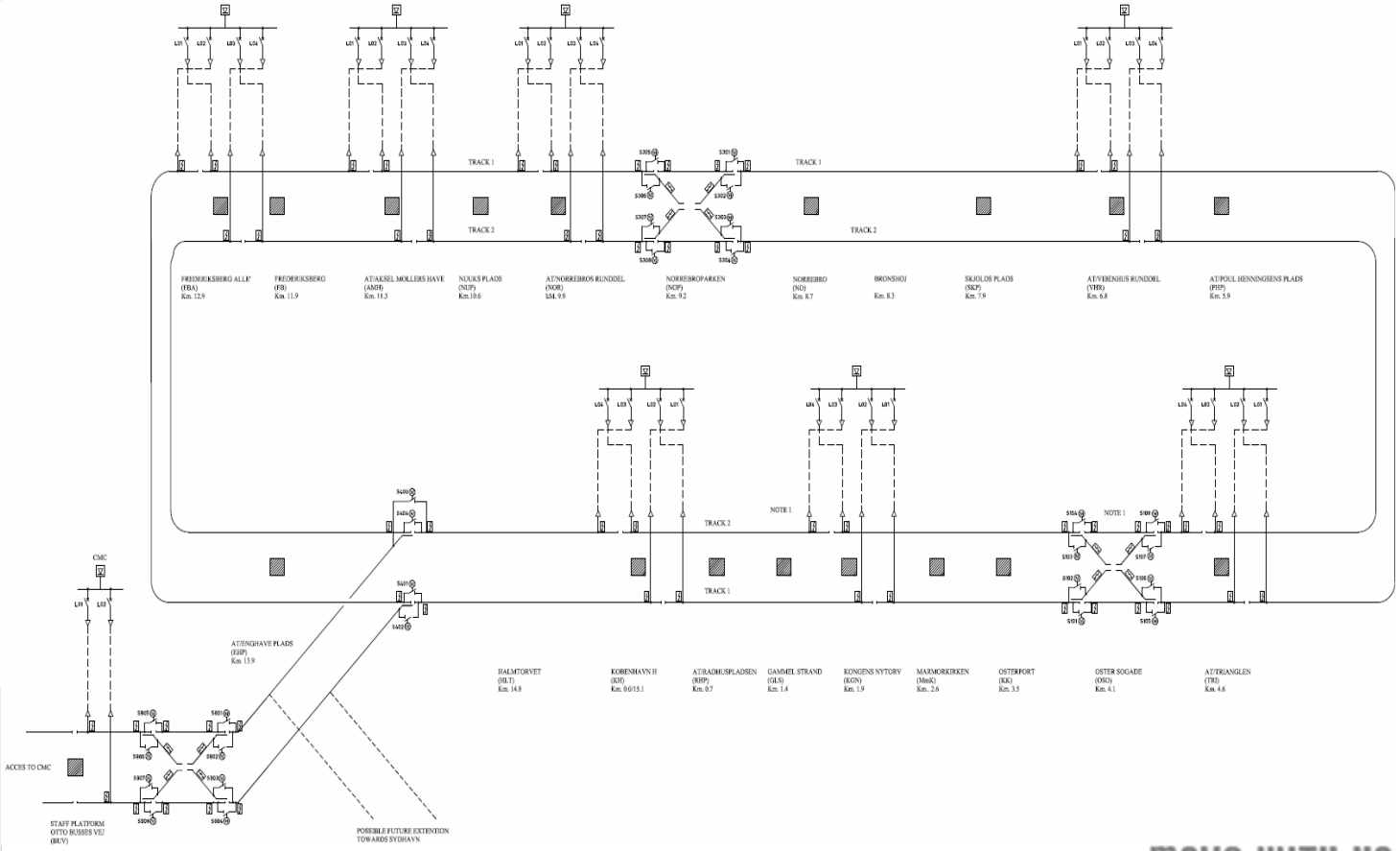
Traction Power

Third Rail Line Diagram



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Back-up Power Facilities

UPS

In case of black-out the UPS powers the following subsystems for a minimum of 2 hours:

- ATC
- SCADA
- PSDS

The following sub-systems are powered by UPS for minimum 4 hours:

- Radio & Transmission
- PS&IS

Diesel Generator

The Control Centre is powered by the UPS for the first hour and than by the Diesel Generator for the time needed.

Vehicle UPS

The vehicles are only provided by UPSs which power the onboard auxiliary equipments for one hour.

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Management of Interfaces

Interface schedules in the Contract including precise description of:

- Physical interface division of scope;
- Engineering interface division of scope.

VOC milestone (Verification of Contract) within 3 months from Contract signature:

- Each contractor shall confirm the knowledge of the other contractor's Contract and lists any detected inconsistency towards its own Contract.

IAP milestone (Interface Agreement Planning) within 6 months from Contract signature :

- The Contractors (inquirer and provider part) shall confirm for each interface the content (as anticipated in the Interface Schedule);
- The Contractors (inquirer and provider part) shall agree the planning for the exchange of the interface information.

Client Mediation:

- The Contractors shall agree and resolve their interfaces directly with each other and with the Other Parties. The Employer will oversee, supervise and monitor the process.
- At any time a Contractor can ask the Client mediation about disagreement about content and completeness of the received interface information. The Client mediation can be asked also in case the information is not provided timely.

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Project Design Documentation

Document Review

The documentation produced according to the contract specifications during all project's phases is submitted to the Employer for review. The Employer may conduct a selective review of the documentation in a 20-working day period after the submission, which leads to one of the following written results:

- Not Reviewed. The Employer has chosen not to review the document;
- Reviewed, No Comments. The Employer has reviewed the document and has found no reason for comment it;
- Reviewed with Comments. The Employer has reviewed the document and has provided the relative comments.
- Rejected. The Employer has identified reasons to not consider the document acceptable.

Irrespective of the result of the Employer's review, ASTS bear the responsibility of fulfilling the contract requirements.

ASTS respond in writing to the Employer review comments within 15 working days of such being raised by the Employer.

Each phase can be considered finalized once the related milestone is approved.

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About Nordhavn Extension

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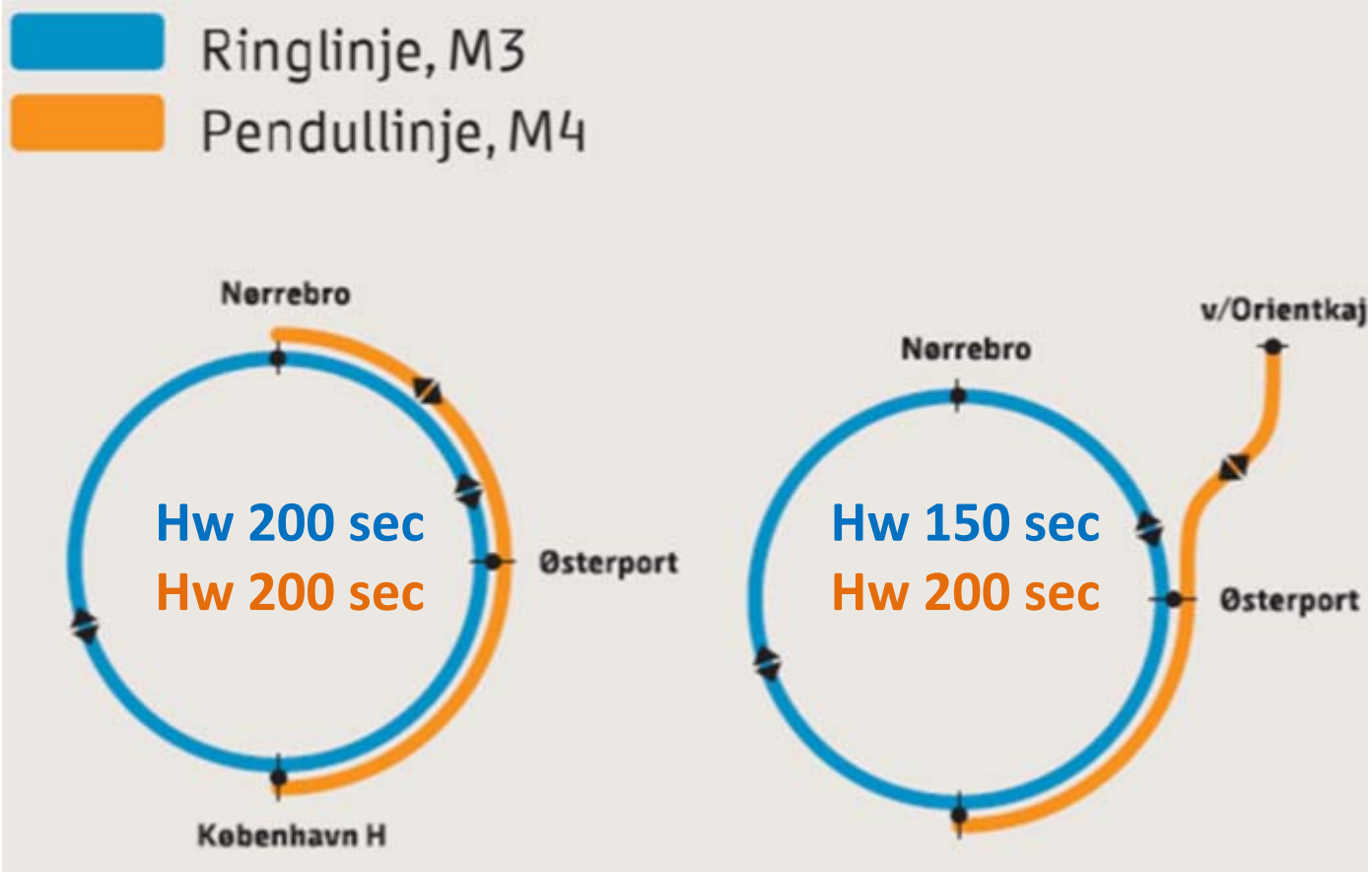
About Nordhavn Extension



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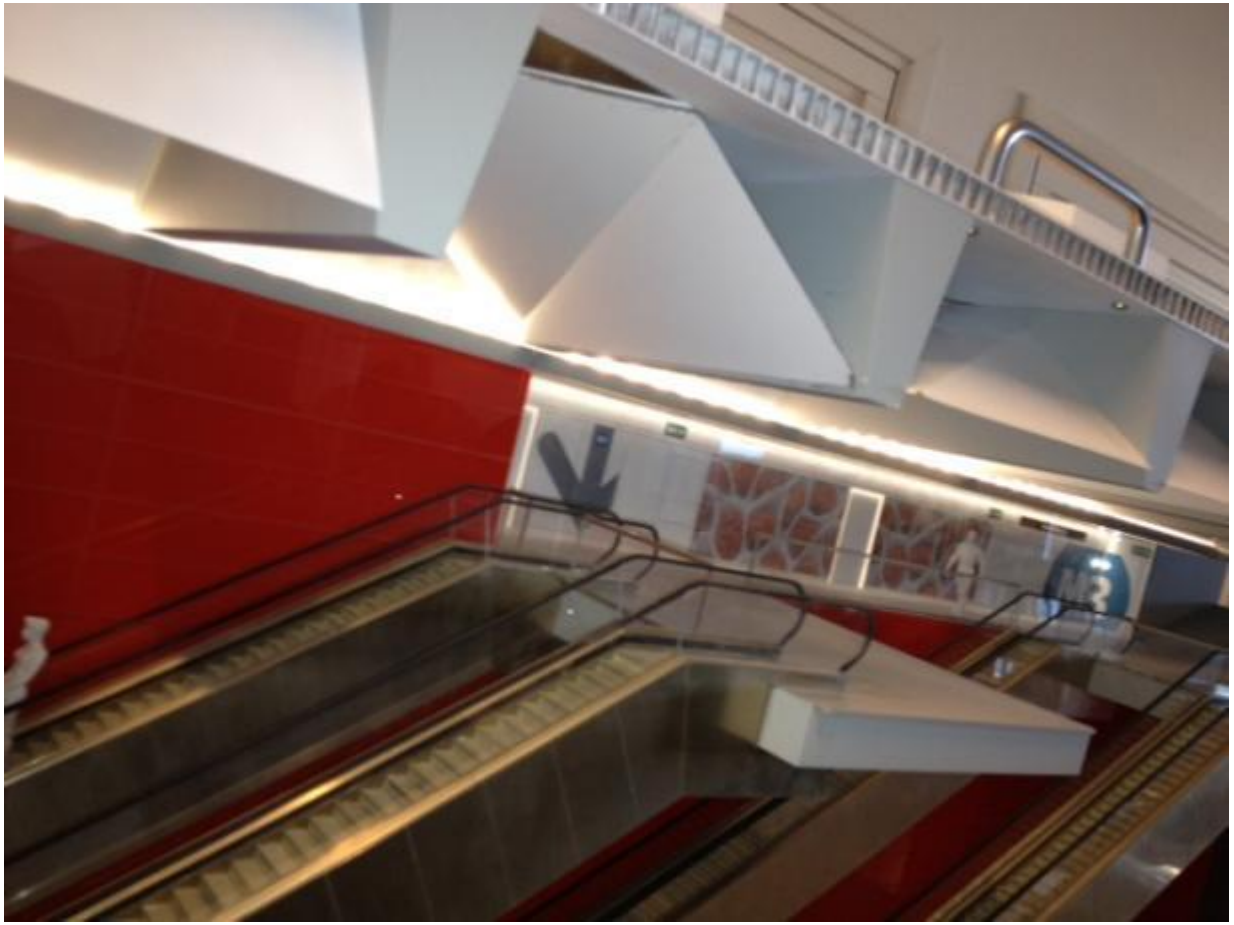
Architectural finishes: Stations



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Architectural finishes: Stations

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Architectural finishes: Stations

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Construction challenges

All Transportation System construction activities will be carried out in tunnel.

The main criticality will be the coordination between Civil Works and Transportation System activities in the underground sites.

The sequence of works in tunnel will be:

- TBM excavation tunnel;
- First stage of concrete slab;
- Second stage of concrete slab;
- Trackwork installations and other TS installations;
- CW finishing and MEP installations;
- TS installations completion.

The work program will be driven by the TBM's progress.

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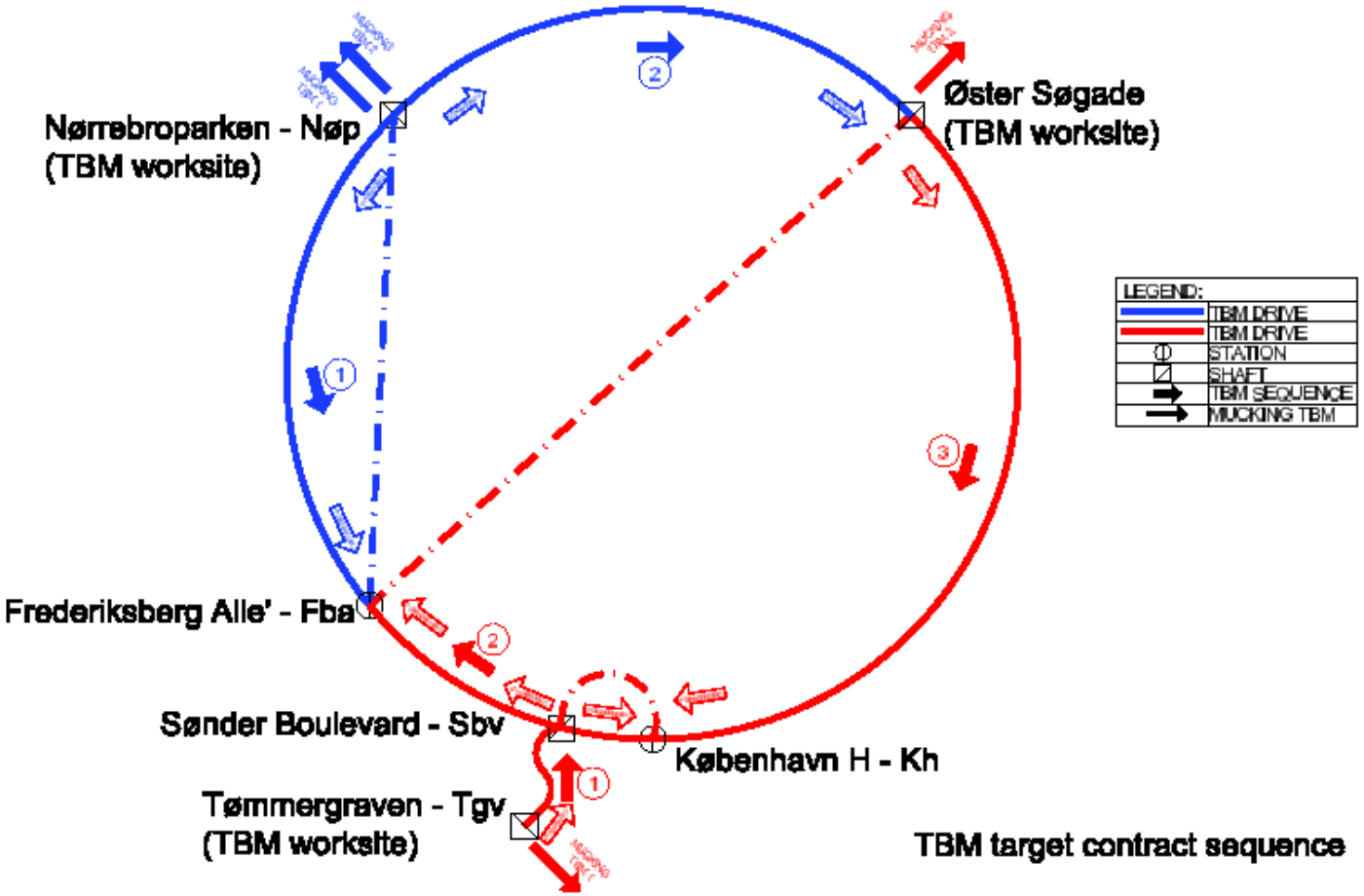
Construction challenges



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Construction challenges

Below a picture of TBM just arrived in Nørrebroparken shaft during the assembly phase. The TBM is located at - 40 m on the station bottom slab

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Construction challenges

Marmorkirken station

One station will be placed under Marmorkirken, the dome of Copenhagen. The excavation in this historical area will be critical.

Here the design has been changed from side by side tunnels to overlapped tunnels in order to minimize the risk of disruption of the wooden foundation piles.

A stronger effort is required in coordinating CW/TS interfaces of this station.

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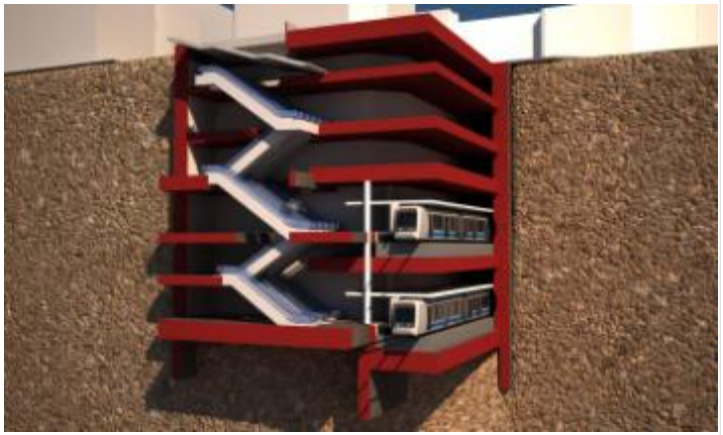
Construction challenges

Marmorkirken station

Below a sketch showing the double barrel tunnel in Marmorkirken station with platform levels overlapped.

Two criticalities are the detailed design of technical rooms due to the reduced available spaces and the installation sequence due to the CW construction program.



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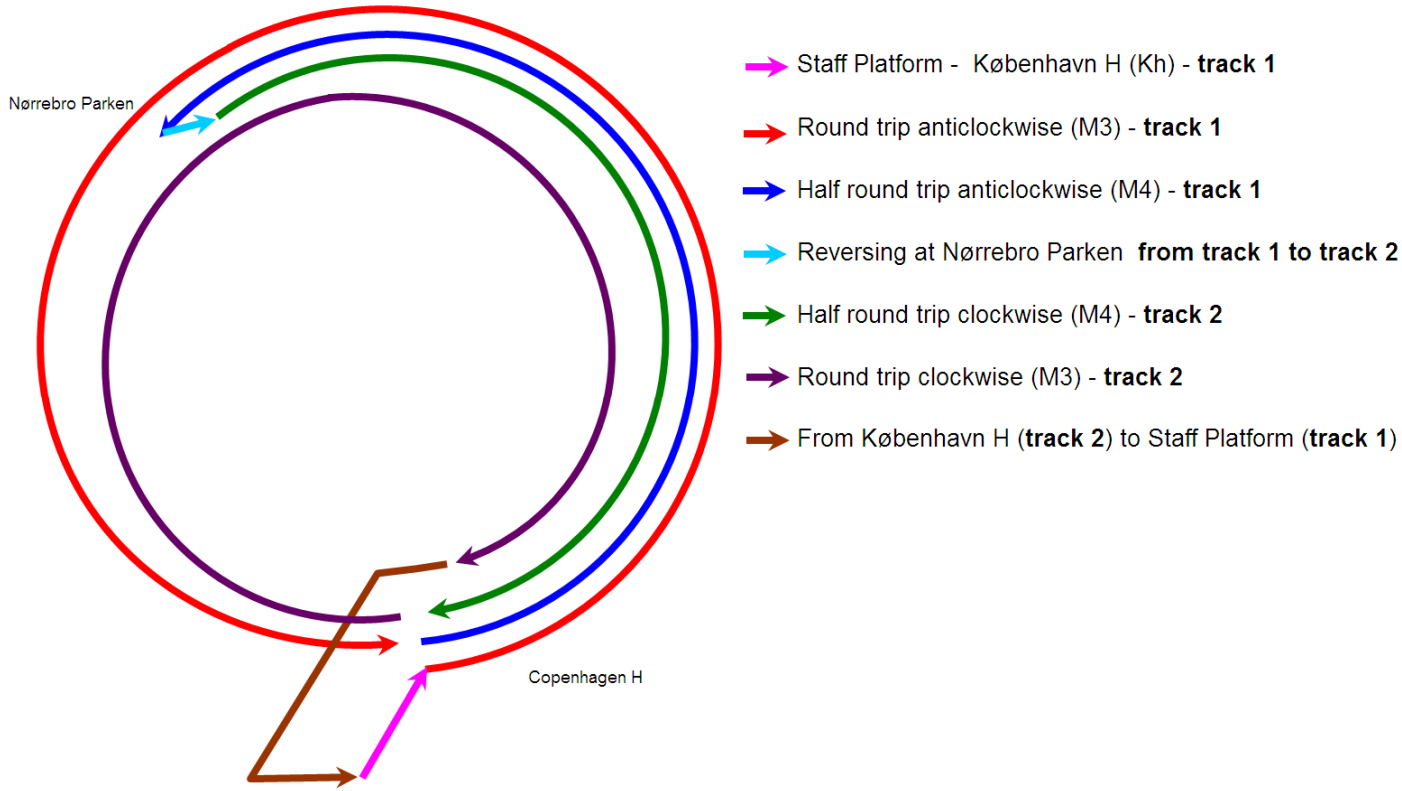
O&M – Traffic Operation Description

Cityringen shall operate 24 hours/7 days a week with a planned operational headway of approximately 100 seconds during rush hours in the central area where M3 overlaps M4 line.



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O&M – Normal Operation

Headway based service

The O&M Provider shall provide a headway-based service for passengers. The headway shall change throughout the day based on a headway plan supplied by the Client.

Headway plan M3 (seconds)				
period	Mon -Thu	Fri	Sat	Sun
0:00-1:00	600	600	360	360
1:00-5:00	360	720	720	720
5:00-6:00	600	600	600	600
6:00-7:00	360	360	600	600
7:00-9:00	200	200	360	360
9:00-12:00	240	240	300	360
12:00-14:00	240	240	300	360
14:00-18:00	200	200	300	360
18:00-20:00	300	300	360	360
20:00-0:00	360	360	360	360

Headway plan M4 (seconds)				
period	Mon -Thu	Fri	Sat	Sun
0:00-1:00	600	600	360	360
1:00-5:00	0	0	0	0
5:00-6:00	600	600	600	600
6:00-7:00	360	360	600	600
7:00-9:00	200	200	360	360
9:00-12:00	240	240	300	360
12:00-14:00	240	240	300	360
14:00-18:00	200	200	300	360
18:00-20:00	300	300	360	360
20:00-0:00	360	360	360	360

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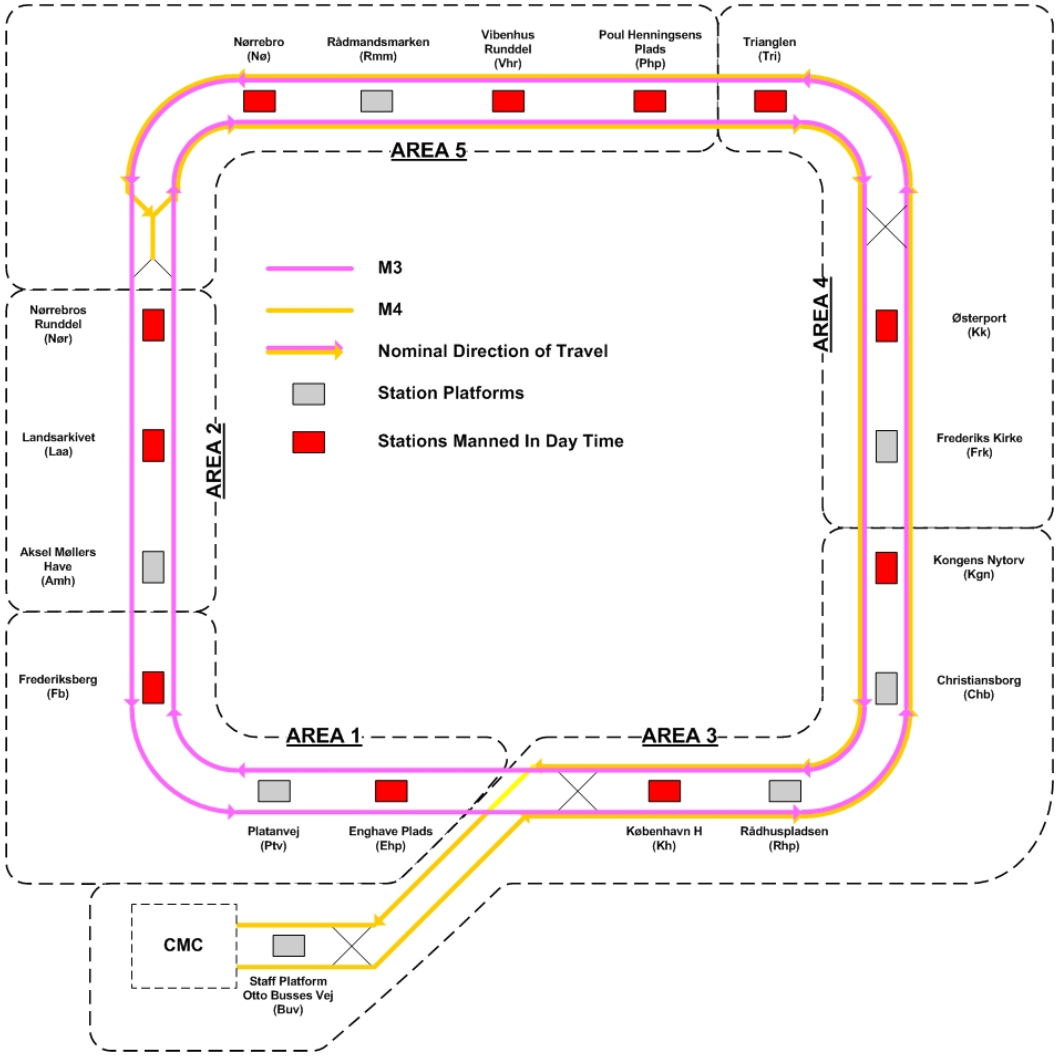
O&M – Service staff in normal situation



During daytime, the main goal will be maintain train circulation as smooth as possible, reducing reaction times to minimum:

1.Eleven stations will be permanently manned in day time to ensure both a fast response time and high level of customer service with focus on crowd control.
2.Stewards not located on platforms will be roving within their assigned area, using trains to move from station to station.

During night time all trains will be manned by Stewards to ensure immediate response and provide the best customer service and assistance to the passengers.

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O&M – Maintenance Concept for 24/7 Operation

In order to perform maintenance activities passenger service will be reduced to one track operation between 01.00 to 05.00 on Mondays,Tuesdays, Wednesdays and Thursdays to allow for trackside maintenance on the other track.

When normal operation is not required for 4 hours in one track, the systems and the procedure for reduction of service, establishment and dismantling of work zones and return to normal operational service (including sweep operation) anywhere on the mainline shall allow for minimum 3 hours and 20 minutes of effective work in the work area.

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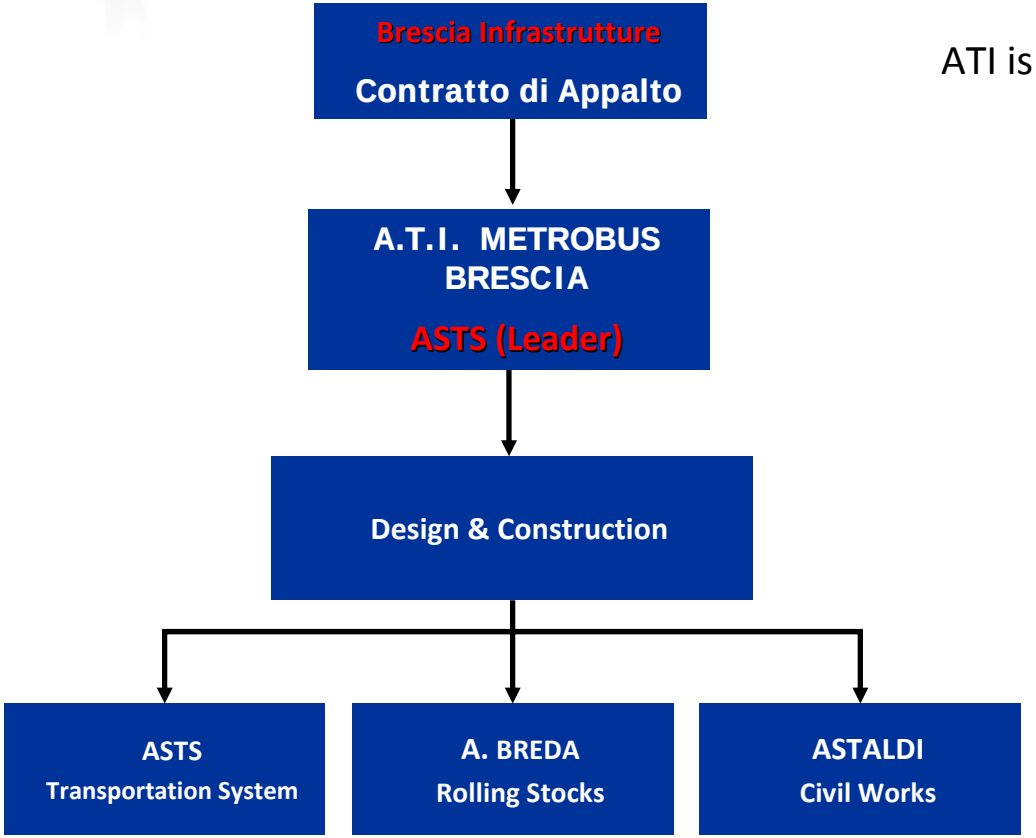
Project Overview

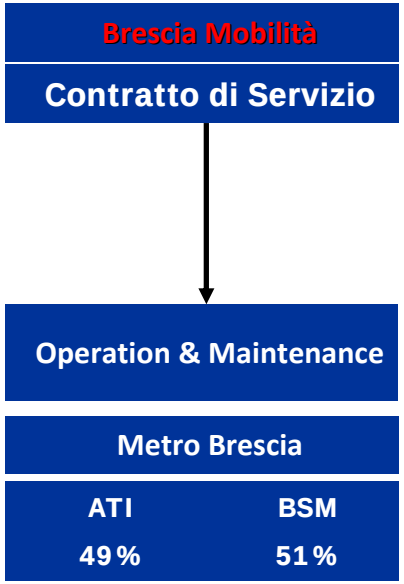
Gianluca Magro
Project Manager

The Consortium

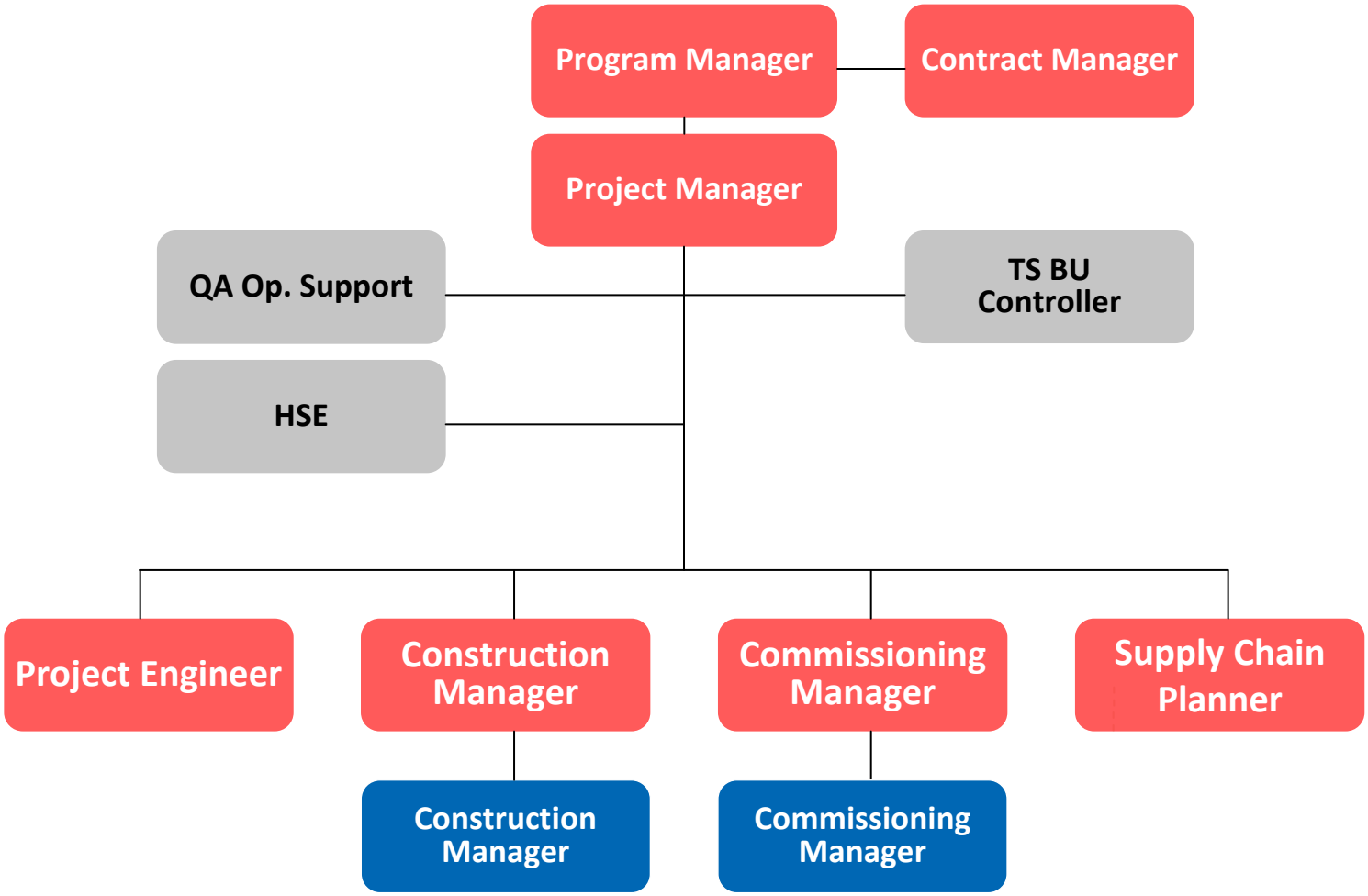
The Metro Brescia Project was assigned in October 2003 to the following group of companies:



ATI is also involved as a share in the O&M Company



The Project Team



BU Signaling | BU Transportation Solution | Staff Function

The Project

In October 2003 ATI signs the EPC contract for engineering, construction operation and maintenance for Metropolitana di Brescia basing on the already operational Metro Copenhagen.

Total Lenght	13,1 km	17 Stations
Tunnel	5,9 km	8 Stations
Cut & Cover	3,8 km	5 Stations
Above Ground	3,4 km	4 Stations

The Metro Line crosses densely populated areas and it connects the city's main points of interest, integrating itself with the existing public transport.

Civil Works and Mechanical & Electrical Installations

Civil Works:

Excavation	1.260.000 mc
Excavation in tunnel	370.000 mc
Embankment	350.000 mc
Concrete	600.000 mc
Reinforcement steel bars	40.000 ton

Tunnel Boring Machine:

Diameter	9,15 m
Average Excavation	10 m/day

Mechanical & Electrical Installation:

Power Supply Distribution	Lifts
Tunnel Ventilation	Escalators
Lighting System	Security
Fire Fighting system	Permanent Way

Main Characteristics of the Project

The Line:

Total Length	13,1 km
Tunnel	5,9 km
Cut & Cover	3,8 km
Above Ground	1,7 km
Viaducts	1,7 km

The Stations:

Total Length	17
Tunnel	8
Cut & Cover	5
Above Ground	2
Viaducts	2

Main Characteristics:

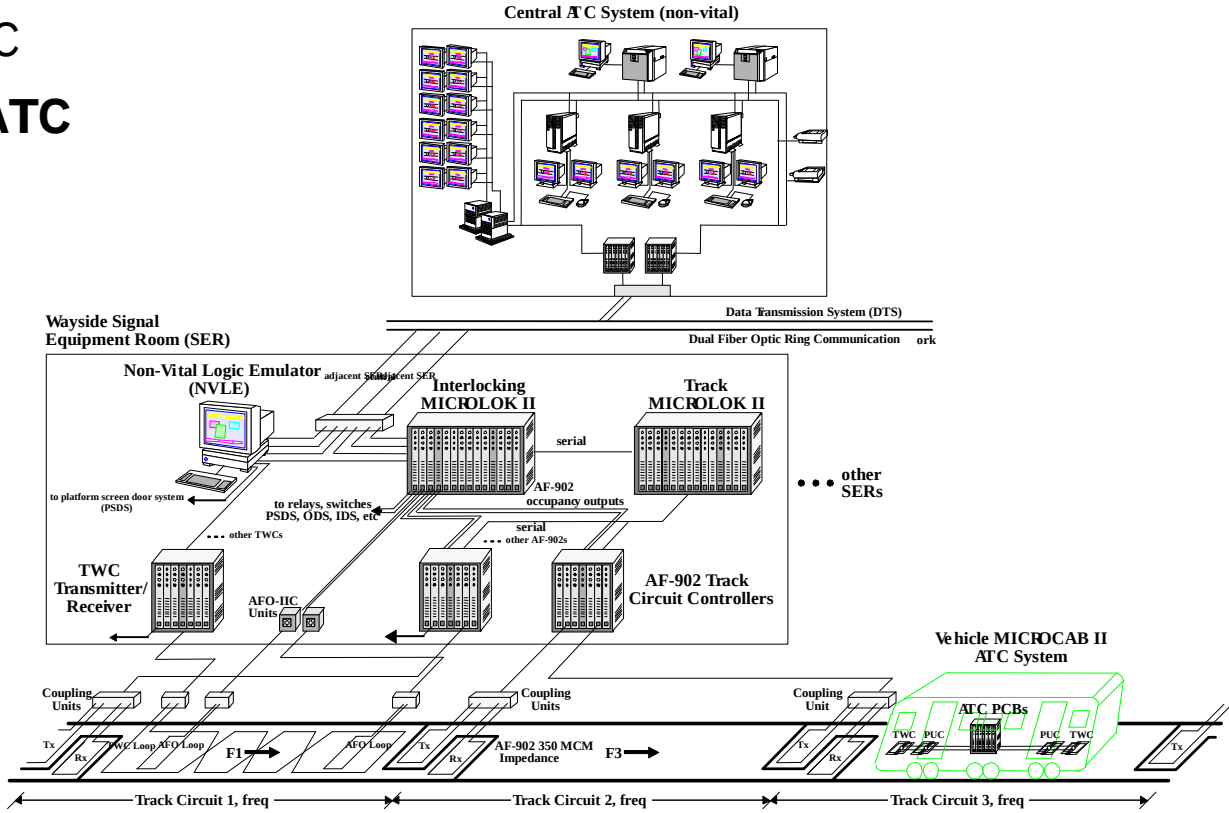
Maximum Transportation Capacity	17.000 Pass/hdir
Yearly Traffic expected	16 mio Pass/ydir
Fleet	18 trains
Peak hour Headway	3 min
Out of Peak Headway	3÷6 min
Commercial Speed	avg 30 km/h
Maximum speed	80 km/h

Operation Control Center - OCC

The OCC supervise and co-ordinate the traffic management, the infrastructure and the passenger security and information system. 3 operators and 1 supervisor will manage the OCC.
An Emergency Backup Control room is available.

Operation Control Center - OCC

Automatic Train Control - ATC



ATC ensures safe and reliable automatic operation of the complete Metro System.

ATC provides the following:

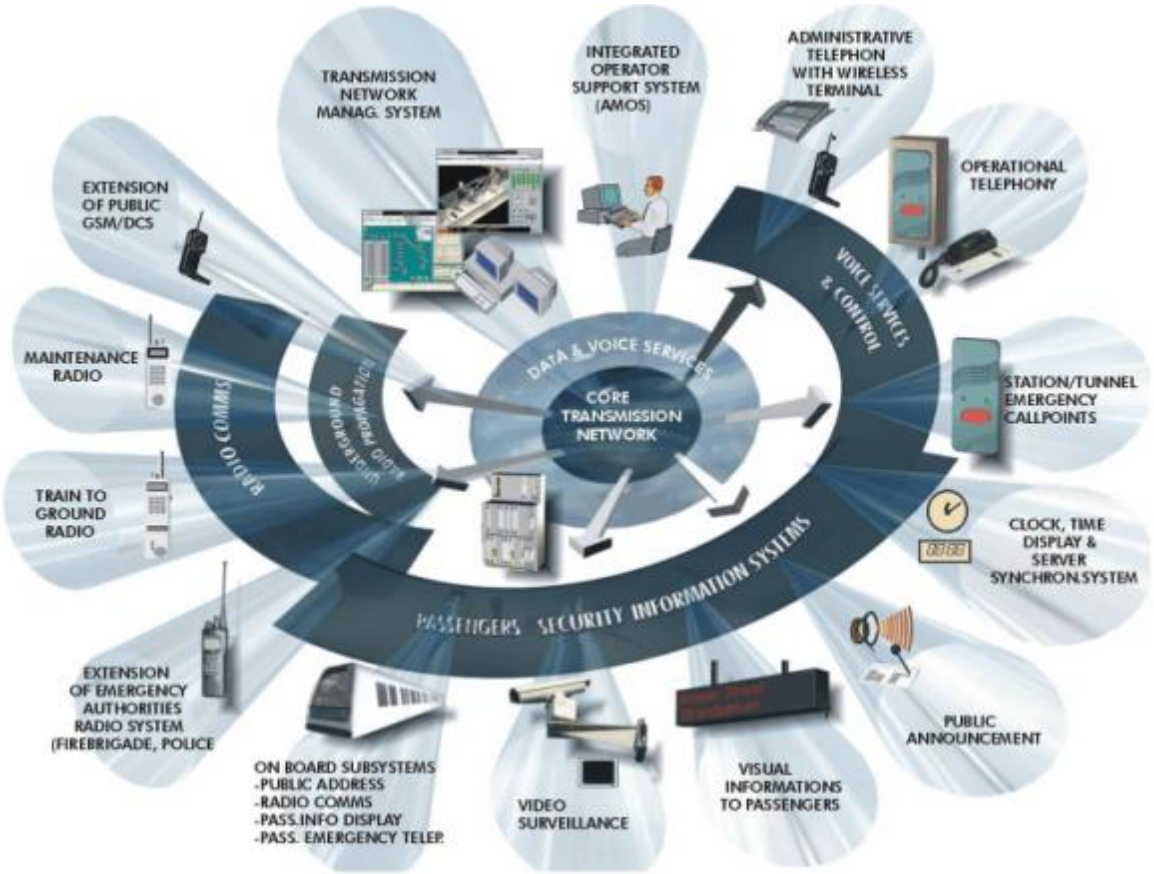
- **Automatic Train Protection - ATP: Protection for passengers, personnel and equipment against hazards of operation.**
- **Automatic Train Operation - ATO: control of the Operations that otherwise would be performed by a train driver.**
- **Automatic Train Supervision - ATS: overall Supervision and control of train traffic including information for OCC**

Technological Subsystems

Operation Control Center - OCC

Automatic Train Control - ATC

Telecommunication - TLC



The TLC system provides the OCC with the facilities to supervise the passenger areas and trains by audible and visual information and communication links.

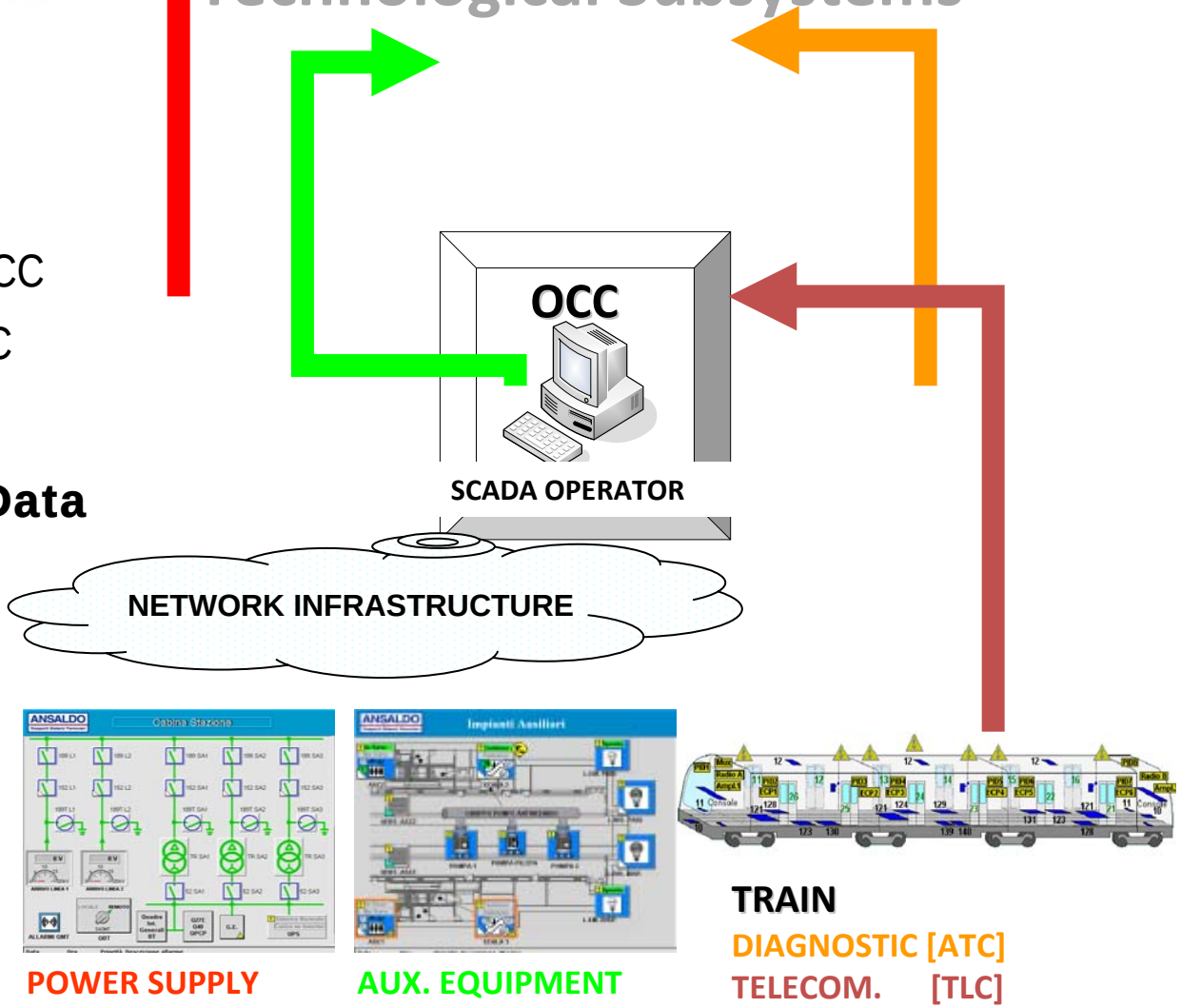
Technological Subsystems

Operation Control Center - OCC

Automatic Train Control - ATC

Telecommunication - TLC

Supervisory Control And Data Acquisition - SCADA



The purpose of the SCADA System is to ensure safe and reliable supervision and control of technological Subsystems and M&E Installation of the complete Metro System.
In particular: Power Supply, Traction Power, Station Equipments & Ventilation, Ticketing vending machines

Technological Subsystems

Operation Control Center - OCC

Automatic Train Control - ATC

Telecommunication - TLC

Supervisory Control And Data Acquisition – SCADA

Platform Screen Doors - PSD

All stations are provided with Platform Screen Doors controlled by ATC subsystem.
This technology will assure both a safe separation between platform and track and a better comfort of the passengers in the stations. Platform Screen Doors are installed in each station of the Metro with the purpose to assure passenger safety and to separate the platform from the track.
Each train stops at the station platform in a position where the train doors are in correspondence of platform screen doors. Emergency screen doors are located between two adjacent automatic screen doors. The doors opening time can be adjusted in each platform

Technological Subsystems

Operation Control Center - OCC

Automatic Train Control - ATC

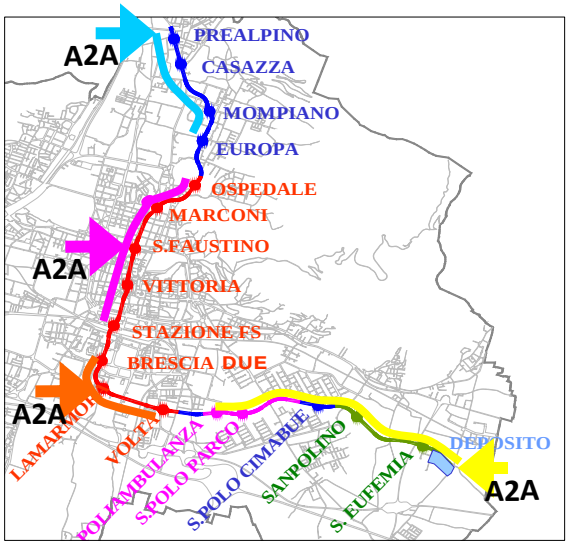
Telecommunication - TLC

Supervisory Control And Data Acquisition – SCADA

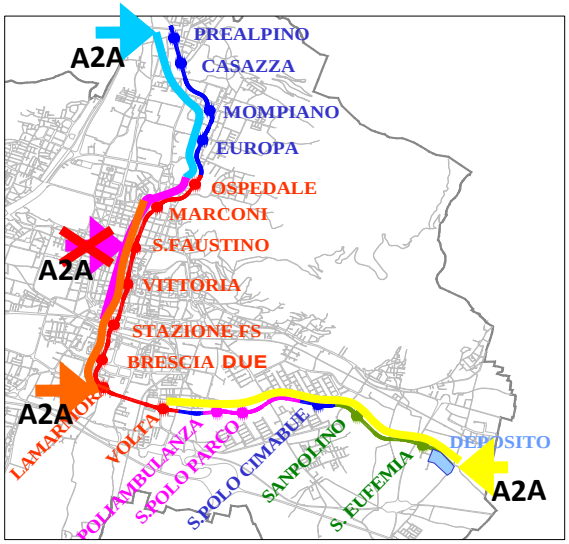
Platform Screen Doors - PSD

Power Supply

NORMAL CONDITIONS



STATION OUT OF SERVICE



The power supply system is fed from A2A (Brescia Energy Company) by a 15 KV line through 4 feeding points and provides energy to the third rail with 750 V DC (Traction Power) and to auxiliary electrical utilities.
The MT distribution is set up to distribute the loads among the 4 feeding points both in normal conditions and in the event of a single feeding point being out of service.

Technological Subsystems

Operation Control Center - OCC

Automatic Train Control - ATC

Telecommunication - TLC

Supervisory Control And Data Acquisition – SCADA

Platform Screen Doors - PSD

Power Supply

Third Rail

The third rail is a conductor bar made by aluminium and steel which is located way side the track with the purpose to supply the train the traction power. The train take the current by a number of contact shoes which slide on the third rail. The third rail is protected by an insulated cover (captation from below).
The choice of the third rail has the advantage of a smooth environmental impact in respect of the overhead contact line.

Passenger Vehicles

Fleet	18 trains
Total Lenght	39 m
Doors	6 x side
Pass. Capacity	425 pass
Maximum Speed	80 km/h
Commercial speed	30 km/h
Maximum Speed Allowed in Manual Operating Mode	15 km/h
Acceleration	1.0 m/sec^2
Average Deceleration (Service breaking)	1.1 m/sec^2

Traction power supplied by third rail (750 Vdc)

4 Bogies (3 Independent Motor + 1 Trailer)

Hydraulic Brake System with independent control

Energy collected during electrodynamic brake is transferred to other trains in operation or dissipated through brake resistor

A battery package can provide emergency lighting system and radio supply for 30 min

Trains are equipped with HVAC system

Carbody constructed using modern materials as extruded aluminium and welded profiles and panels

Train Control and Monitoring System

- The Train Control and Monitoring System of the vehicle is based on the use of microprocessor units for specific application on board of railway rolling stock.
- The transportation system is structured in technological subsystems connected one with the other by the Train Communication Network.
- The onboard communication network includes a Multifunctional Vehicle Bus (MVB) interconnecting the control units within the train.
- The vehicle logic has the task to collect process and transmit the commands given by the onboard ATC or, if in manual drive mode, by the driver through the controls located on the emergency driving panel.
- The vehicle logic and the bus communication is completely redundant so as to assure complete vehicle functionality also in case of the 1st failure.
- Each power inverter and relative braking chopper are controlled by a Traction Control Unit (TCU). Each Hydraulic Brake, one for each boogie, is commanded and monitored by a Brake Control Unit (BCU). The TCU/BCU dialogue with the Central Control Units (CCU) by way of the MVB bus.
- This architecture and the use of the MVB have the task to eliminate any single point of failure on the transmission chain so as to assure full operation of the system in presence of a failure of one device.

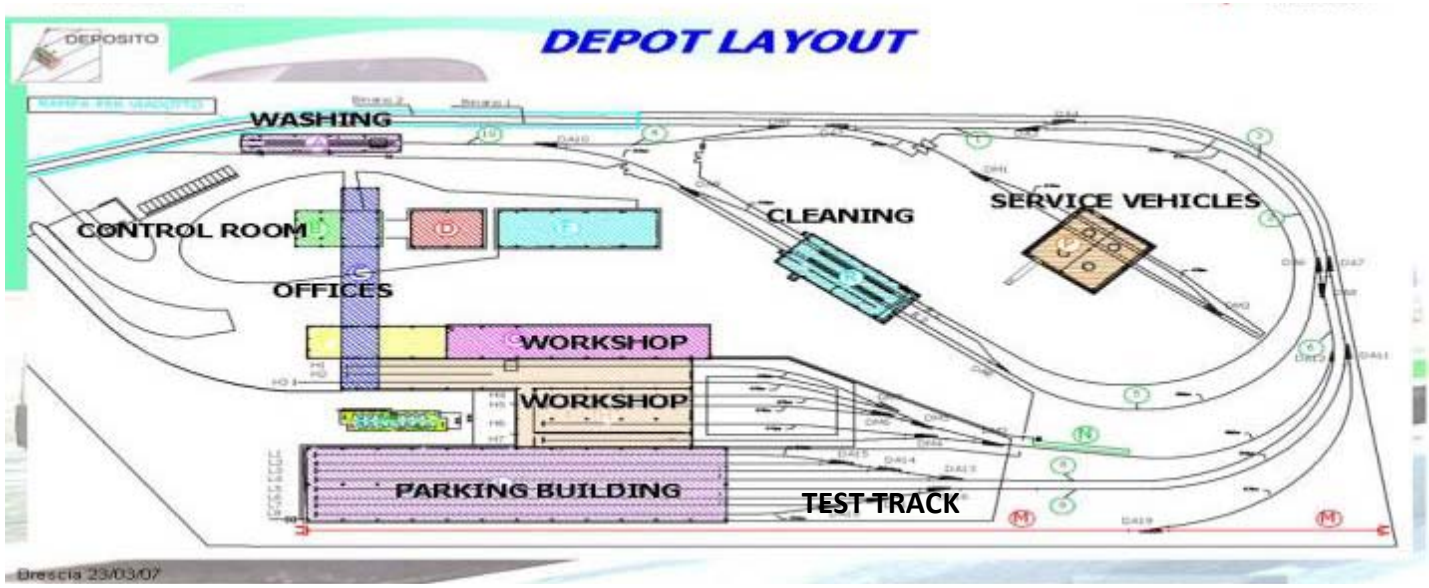
The Depot

The Depot/Work Shop, which extends in a planar area, includes the following main areas/buildings :

- Test Track
- Parking Building
- Work Shop
- Spare Parts Storage
- Automatic Vehicle Washing
- Service Vehicles work shop
- Offices and Control Room Building

Special equipment as pit lathe and vehicle lifting are installed in the work shop.

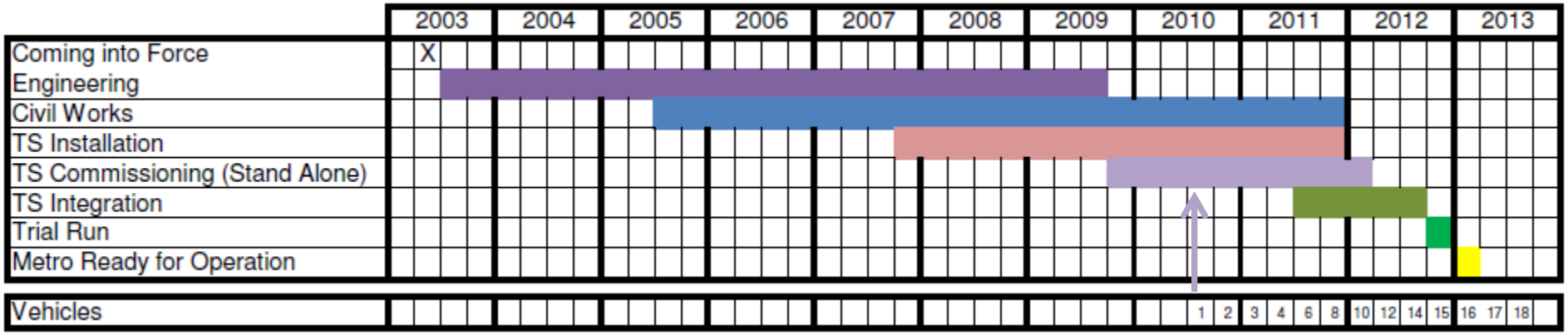
Total Area 72000 m2



Schedule

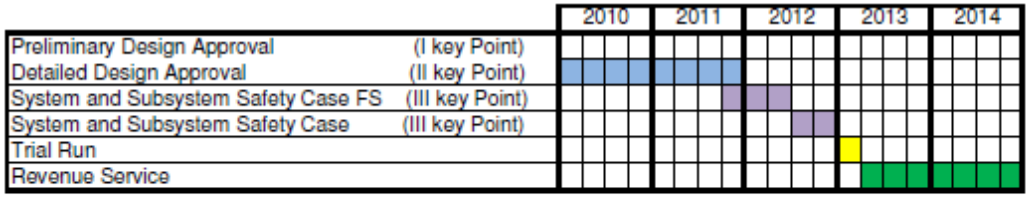
The Metro Project has been running for the past 8 years and will be completed by December 2012.

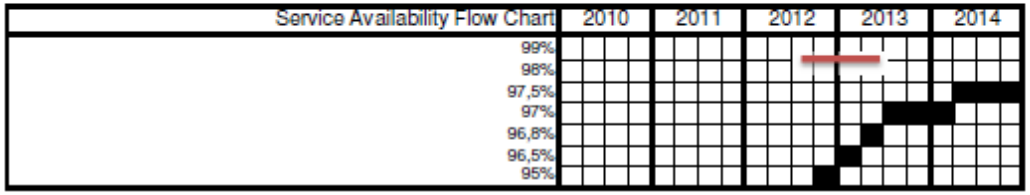
The length of the Project has been caused by significant archaeological discoveries found in Brescia's old City Centre during the excavation phase, and also due to changes to the original project relating to deep stations' design.



Of particular interest were the Venetian wall found near S. Faustino Station and the medieval tower found near Vittoria Station actually integrated in the structure of stations

Key Milestones / Durations / Turnover





ASTS Key Milestones of Commissioning

Depot	Setember 2012
Test Track	February 2012
Functional Section	April 2012
All Metro	November 2012
Trial Run	February 2013

DEPOT + TEST TRACK

TEST TRACK: test of main functionalities and ATC/Vehicles interfaces to identify main issues and validate engineering and interfaces.

FUNCTIONAL SECTION (SOUTH AREA)

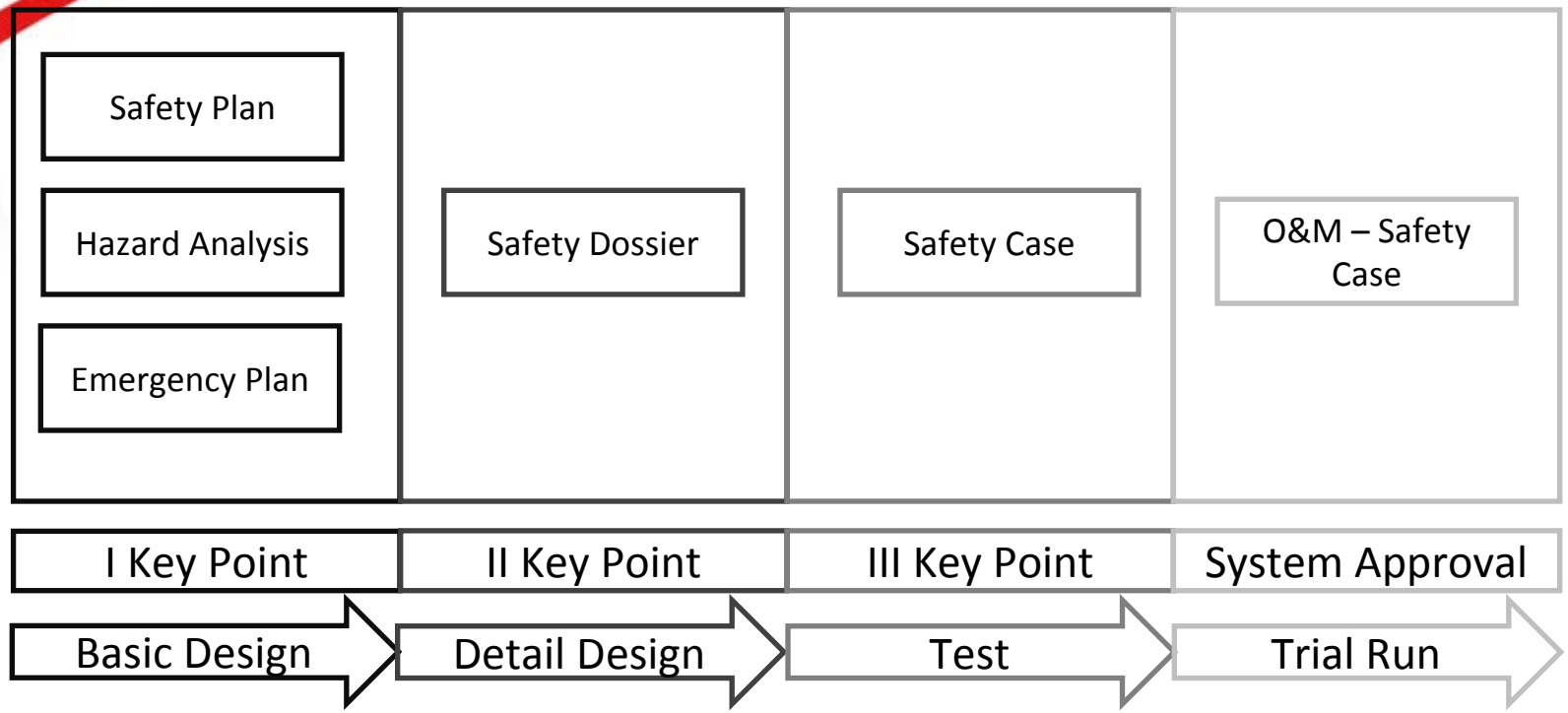
FUNCTIONAL SECTION: increase the number of subsystem involved. It's the most intense interface step and a first validation of system and subsystem safety requirements.

NORTH AREA

CENTRAL AREA

REST OF METRO: extension of functional testing to all geographic sites.

Design Phase Closeout

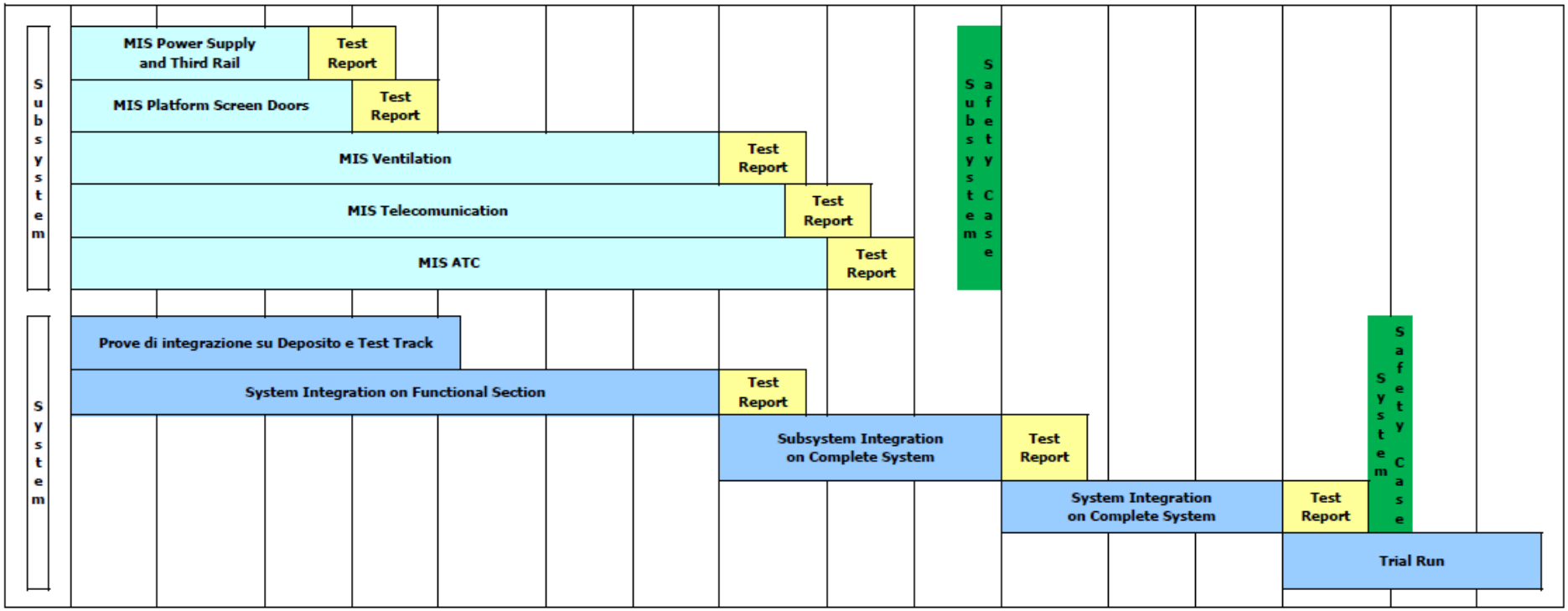


During the Basic Design are drawn up Security Plan, Hazard Analysis and Evacuation Plan. These documents are then collected in a Safety dossier for each subsystem in the Detail Design.

Safety Dossier are enriched with system and subsystem tests plan and become Safety Case.

During the trial run, Safety Dossier is evaluated on the basis of operations and maintenance procedures of the operator.

Test & Commissioning Phase Closeout



Contracting Method for Delivery

ASTS as leader of the JV supervised the integration of the activities and the project schedule.

CHANGE ORDERS

Change orders are agreed with the Employer. The Engineer (Direzione Lavori) assess the price of the change order.

DISPUTES

Possible disputes with the Employer related to the execution of the Contract are registered and referred to the Management of the JV and the Employer for solution.

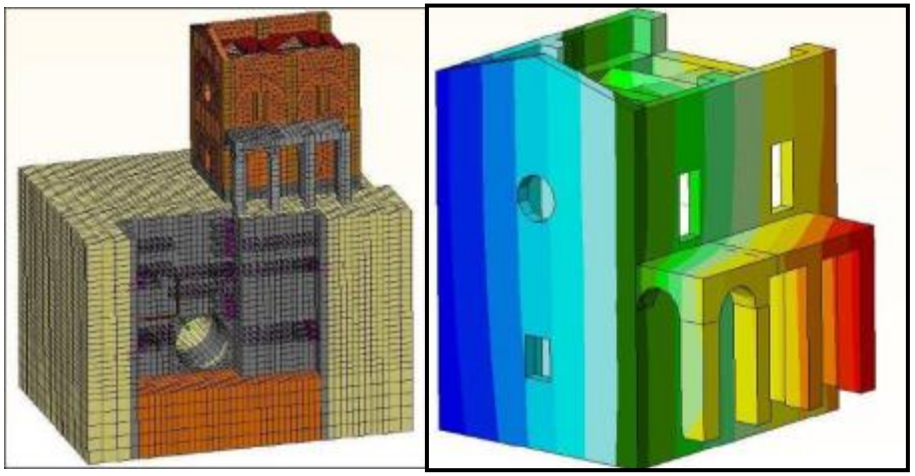
At the time of the opening of the Metro all oustanding disputes were amicably solved.

Construction Challenges

Interface Management on:
-Permanent Way
-Platform Screen Doors
-Finishing works and telecomunication
-Schedule compression for Center Area Station

Brescia Architecture Preservation :

In order to define the position of the station box under S. Agata Curch, Finite Elements Modelling has been carried out to highlight the effect of subsidance deriving from T.B.M. and station excavation works.



The result from the modelling highlighted the need to undertake ground reinforcements under the church foundation before the execution of diaphragms

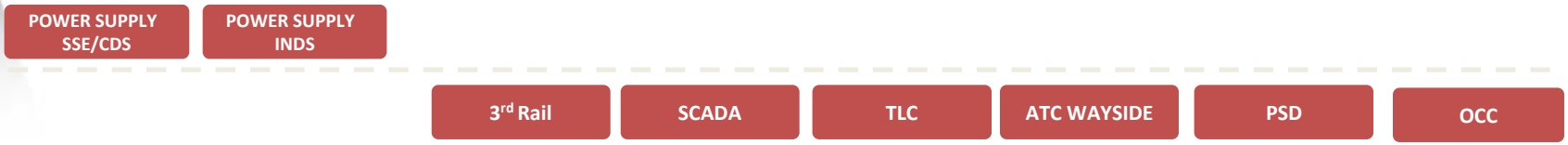
The resultant subsidence after TBM works are wihtin the acceptable limits of:

- 7mm Station Side
+ 8mm Square Side

Commissioning Challenges

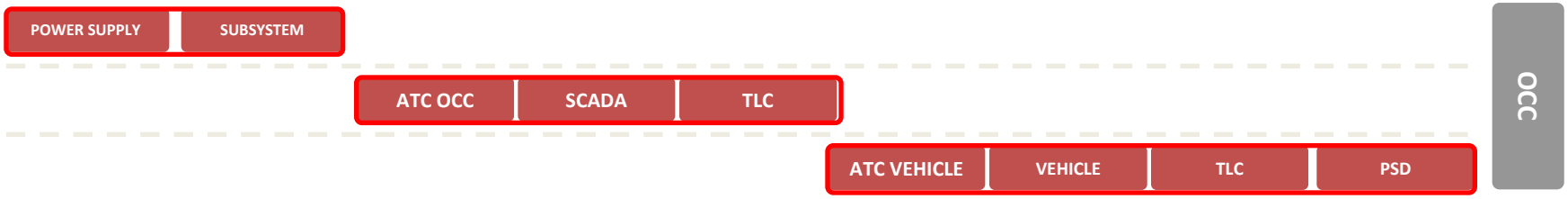
The process starts with the commissioning of each "Stand Alone" Subsystem

1) Subsystems Commissioning



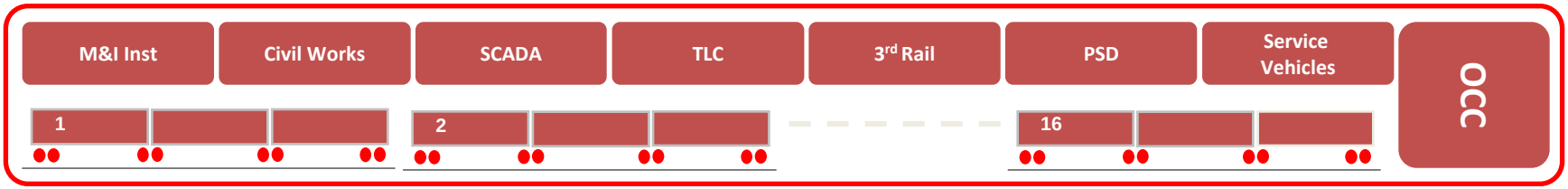
It then verifies the correct interface between the various subsystems

2) Subsystem Integration test

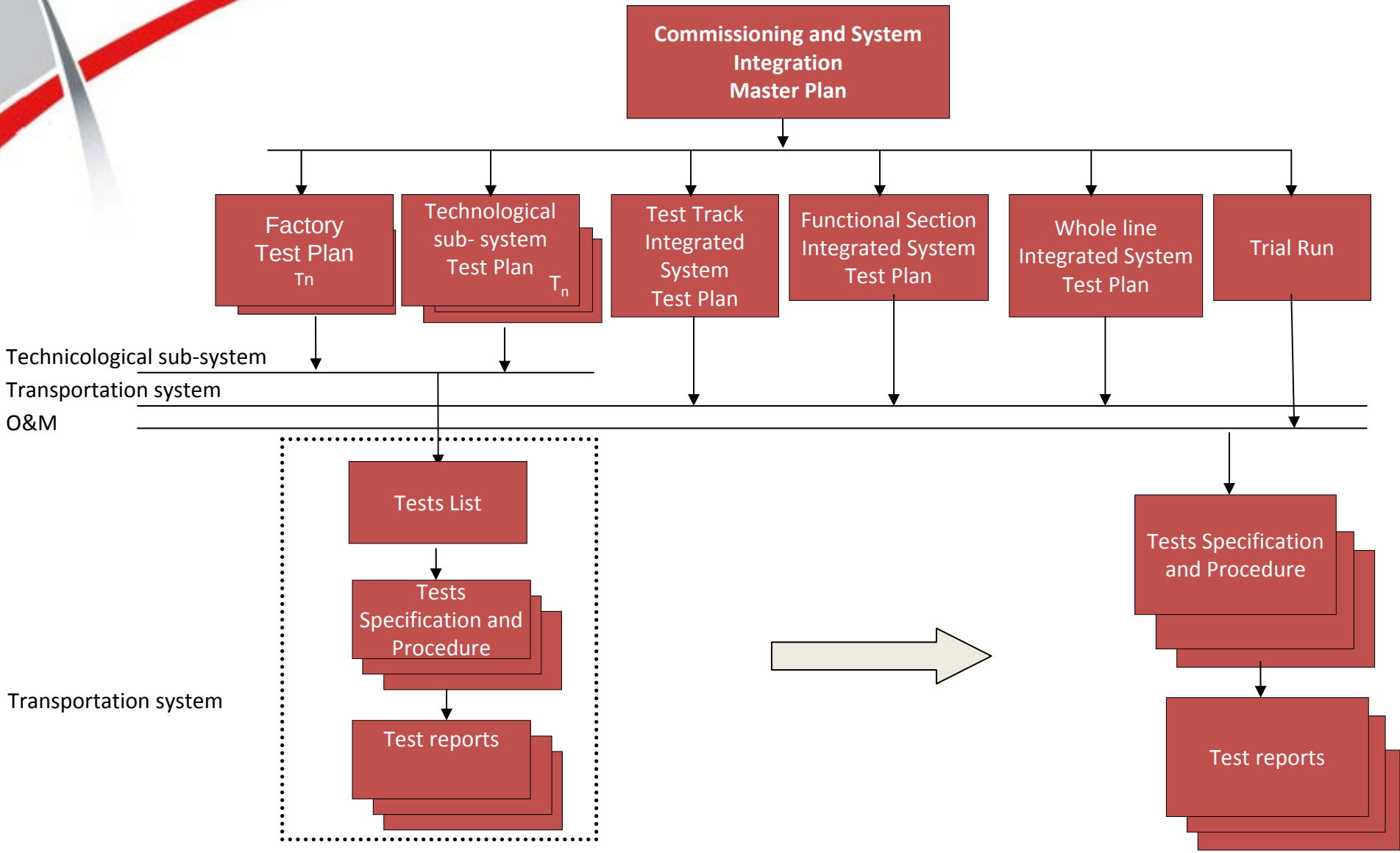


And finally carries out performance, operational and safety verifications of the entire system

3) System Integration Test



Commissioning and System Integration Process



Fixed Facility Interface Issues Lessons Learned

Particular attention to be given to the following:

- Access Milestones to CW and Track Work (Ready for Access)
- Access Availability to Station/Line for Material entrance and Storage
- False Floor installation, finishing Works and installation work interface between the two contractors in the stations
- Temporary power supply and lighting in tunnel and stations
- PSD geometrical tolerances in stations' platforms and supporting structures control
- Track Work Geometry and interferences, benchmark control, chainage verification and turn out positioning and tolerances

Health & Safety:
Coordination between the two Contractors during construction period, while an unique responsibility has been assigned to TS Contractor during Commissioning Period.

Driverless Operation Issues / Challenges

For a driverless system it is fundamental that the O&M services are provided by the same contractor that has designed and supplied the system.
The advantages for the employer are the following:

• The Operator is involved from the early beginning in the design of the system, optimizing the operational procedures

• Engagement of the Contractor to provide a safe and efficient system over the O&M period

• Continuity of interface with the same contractor across the commissioning phase, O&M staff mobilization, system start-up warranty, O&M running phase

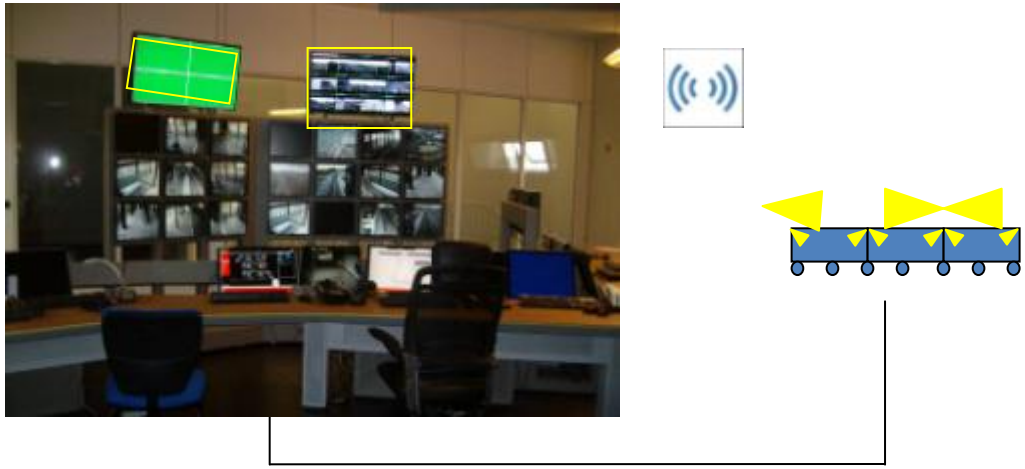
• Ensuring most qualified O&M personnel to run and maintain the system, no risk in transfering the know how from design & construction contractor to O&M contractor

System Element Modification (Post Start)

ASTS and Employer are discussing the implementation of a Video- Surveillance in the stations and on board the trains with real time transmission to the OC.

A system prototype is actually operational on Functional Section and on board of 2 Vehicles.

TVCC: «night & day» cameras have been installed on the whole line with a maximum distance of 150m and have been connected via Optic Fiber Cabel with the Operational Control Room. Images are shown on a dedicated monitor and recorded.



TVCC on Board: 6 analogic cameras per vehicle are connected to OCR via WiFi and shown on a dedicated monitor.

The Broadband system between Vehicle and OCR allows the communication of information on the train and advertizing.

Fixed Facility Interface Issues

With "Interface" we mean any condition for which two Technological Subsystems need to exchange data and/or information which is required for the development of its scope of work.

The management Interfaces between subsystems is organized, during the Detail Design, according to the effective process:

1)An initial list which identifies the Main Interfaces between subsystems. The list is considered an initial reference database that will be integrated during all phases of Design development, with all the possible new interfaces that are deemed necessary to define during implementation of the System.

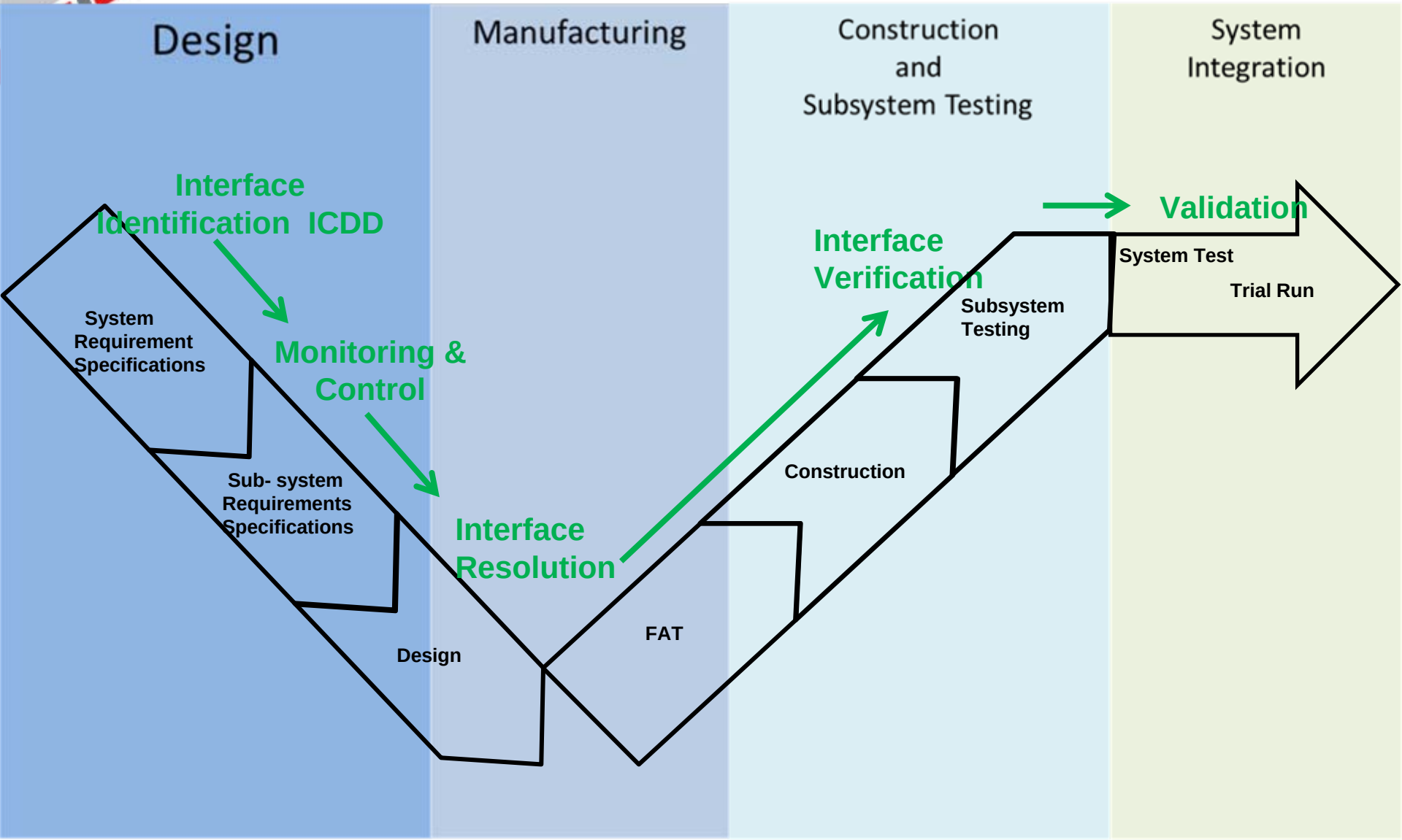
2) A procedure that defines the process of management Interface, from initial opening to final closure, and that defines the procedural flow of the activities, the responsibilities of each actor involved and the criteria for closing Interface.

3) A tool SW (Matrix Interfaces) that has the aim to depict, in a comprehensive and concise form, each interface, the various subsystems involved in the interface resolution and the status of the interfaces. The tool alow to extrapolate partial and/or complete lists of sets of specific types of interfaces through the query functions.

4) A modulus that for each interface has the aim to define the actors involved in the Interface solution; the responsible for the solving process of the same, the actions necessary to close the interface, the interface state (open, in solution, closed), the type of test. These models must be identified according to the coding project.

Fixed Facility Interface Issues

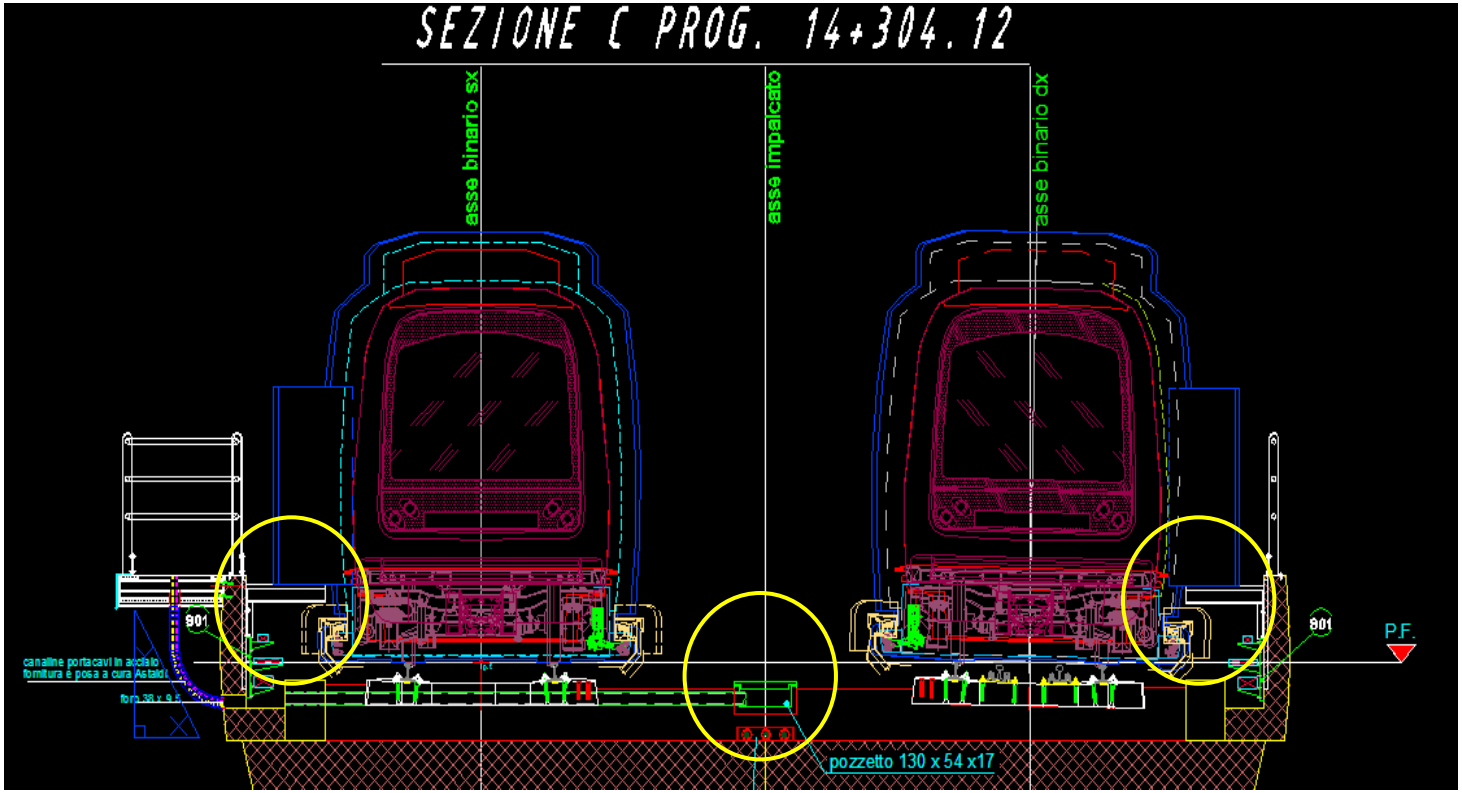
Process is shown here below:



Elevators & Escalators

Elevators and Escalators are monitored and checked by TLC and SCADA subsystems

Cable way solution on line

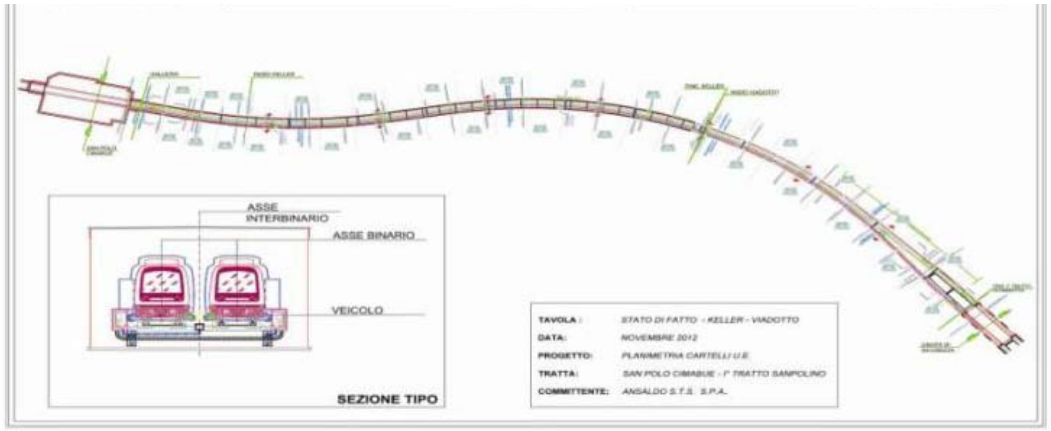


In the viaduct the cable way has been realized in a specific areas:

- Under the emergency walkway by metal cable tray (Low Voltage, Signaling and telecom cables)
- Between tracks by cable trough (Medium Voltage cables)

Emergency Walkways

Emergency walkways are developed along the whole line to ensure safe evacuation of passengers.



Ansaldo STS
A Finmeccanica Company

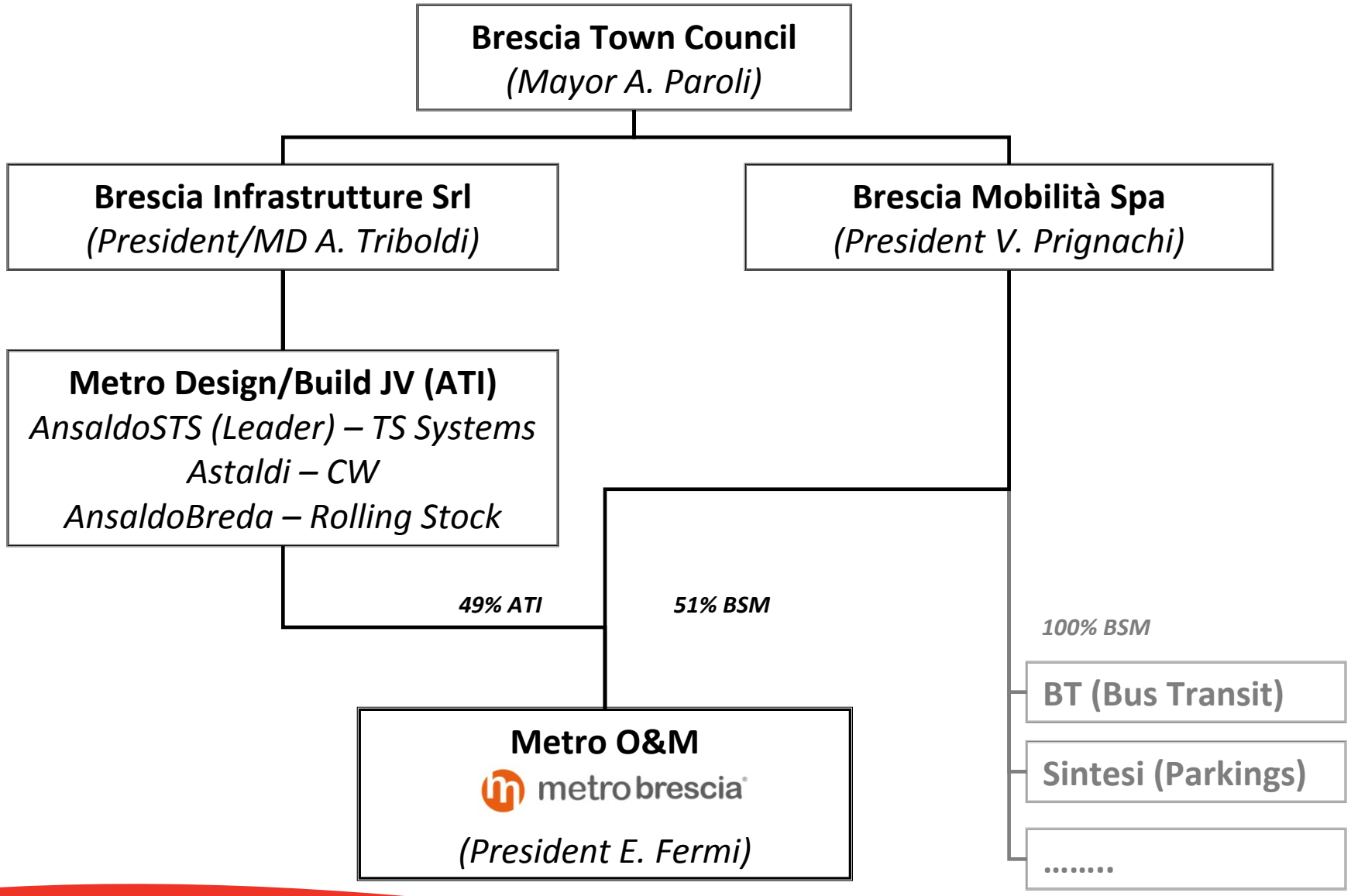
Operation & Maintenance

Luca Meregalli
Manager, Operations

Index

1. O&M Contractual Scheme
2. O&M Scope of work
3. O&M Project Timeline
4. Staffing Levels
5. Outsourcing
6. Main Mobilization Topics
7. O&M Start-up Challengies and keys of success
8. Service Performances

1..O&M CONTRACTUAL SCHEME



2..O&M SCOPE OF WORK

Base Contract

Mobilization	Trial Run & Running O&M						
	TR	y1	y2	y3	y4	y5	y6	y7

Mobilization

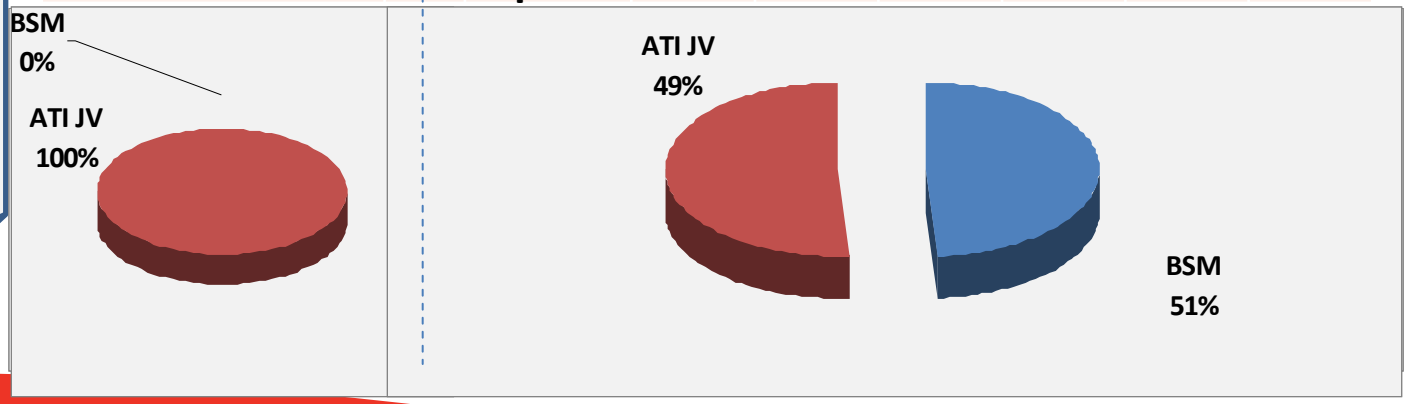
Operation

Maintenance

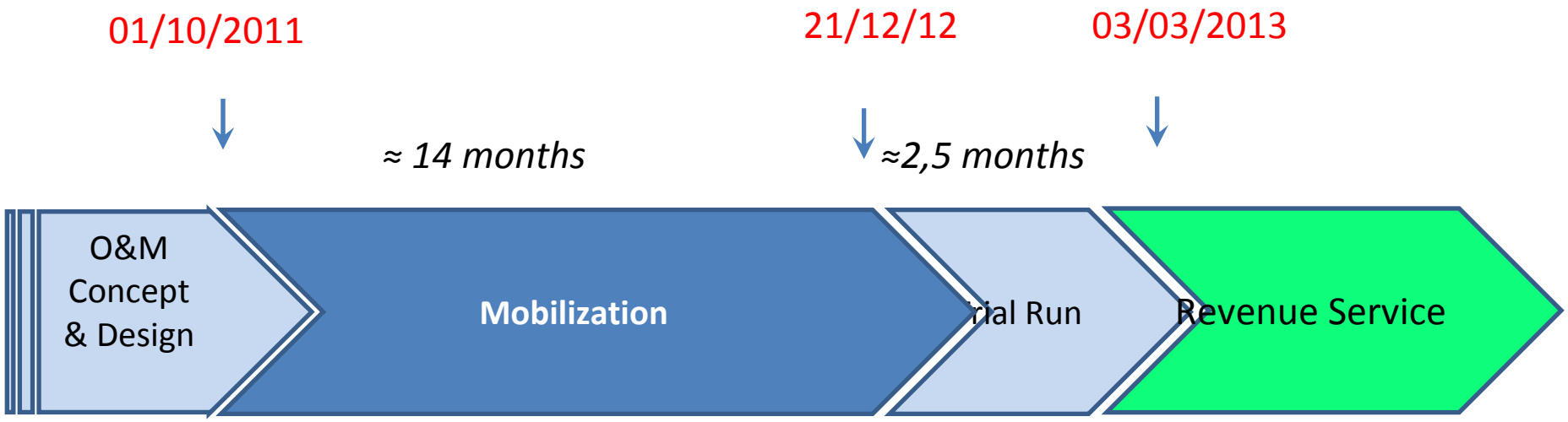
Added SOW: ***Station Cleaning, Customer Service, Ticket Machine maintenance, Ticketing, Station security***

Contract Amendment 2011

Operator's Shareholders



3..O&M PROJECT TIMELINE



Service Plan

Start-up Period (12 months):

Service from 5:30 to 22:30 (extended to 01:00 during w/e)

9 Trains in service during Peak

6/9 minutes headway

After Start-up Period:

Service from 5:00 to 24:00

16 Trains in service during Peak

3/6 minutes headway

4..STAFFING LEVELS
Headcount

Operation:

Control Room Operators: ***n.18***

Stewards: ***n.42***

Staff: ***n.3***

Total 63

Maintenance:

Rolling Stock: ***n.12***

ATC, PSDS, TLC, POWER: ***n.12***

*Civil Works/Trackwork/Stations Installations: n.****12***

Staff: ***n.10***

Total 46

Admin.: n.10

Total headcount: 119

5..OUTSOURCING

Main Sub-Contracts:

- ***Cleaning (Stations/Trains)***
- ***Lifts/Escalators Maintenance***
- ***Track Heavy Maintenance***
- ***Maintenance of Ticket Vending Machines***
- ***Workshop Specialist Equipment (e.g. Wheel Truing Machine/Train Lift)***
- ***Specialist Support Services (ATC, TLC, SCADA)***
- ***Security Services***
- ***IT Services, HSE/HR/Admin/Finance/Legal Services***

6..MAIN MOBILIZATION TOPICS

Staff Selection

Recruitment

Training

Operating Procedures

Operation Planning

Operation Contingecy Planning

Schedules

Track Possession Management

Finance Accouting System

MMIS

Maintenance Planning

Sub-Contracts

Logistic System

Maintenance Start-up

Configuration Management

Warehouse

Supply Chain

IT Supplies

HSE System

QA System

Trial Run

7..START-UP CHALLENGES

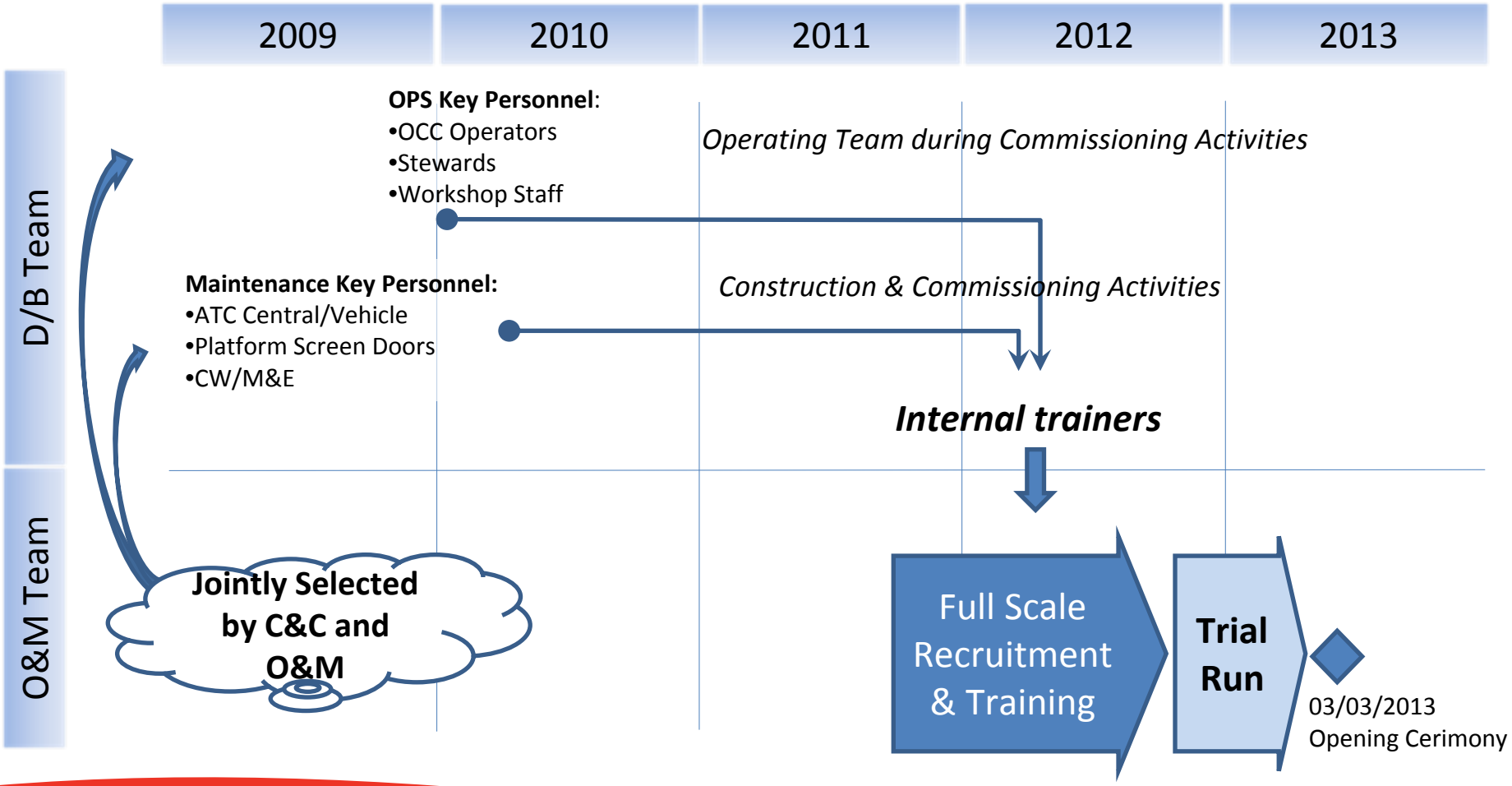
- Build a Railway Operator from scratch
- No «parallel» systems in revenue service to train staff «off-line»
- Attract Railway Professionals in the area
- A Compressed Mobilization
- Potential Clashes among Mobilization Activities and Commissioning activities
- Authority Certification of Staff (STW/OCC)

7..START-UP CHALLENGES
Keys of Success

- Anticipate Recruitment of O&M Key Personnel during Commissioning
- FullScale Recruitment Timing
- Training Strategy (Specifically for Operational Staff)
- Operator’s Empowering
- ATI JV Supporting the Operator during Revenue Service Start-up Period

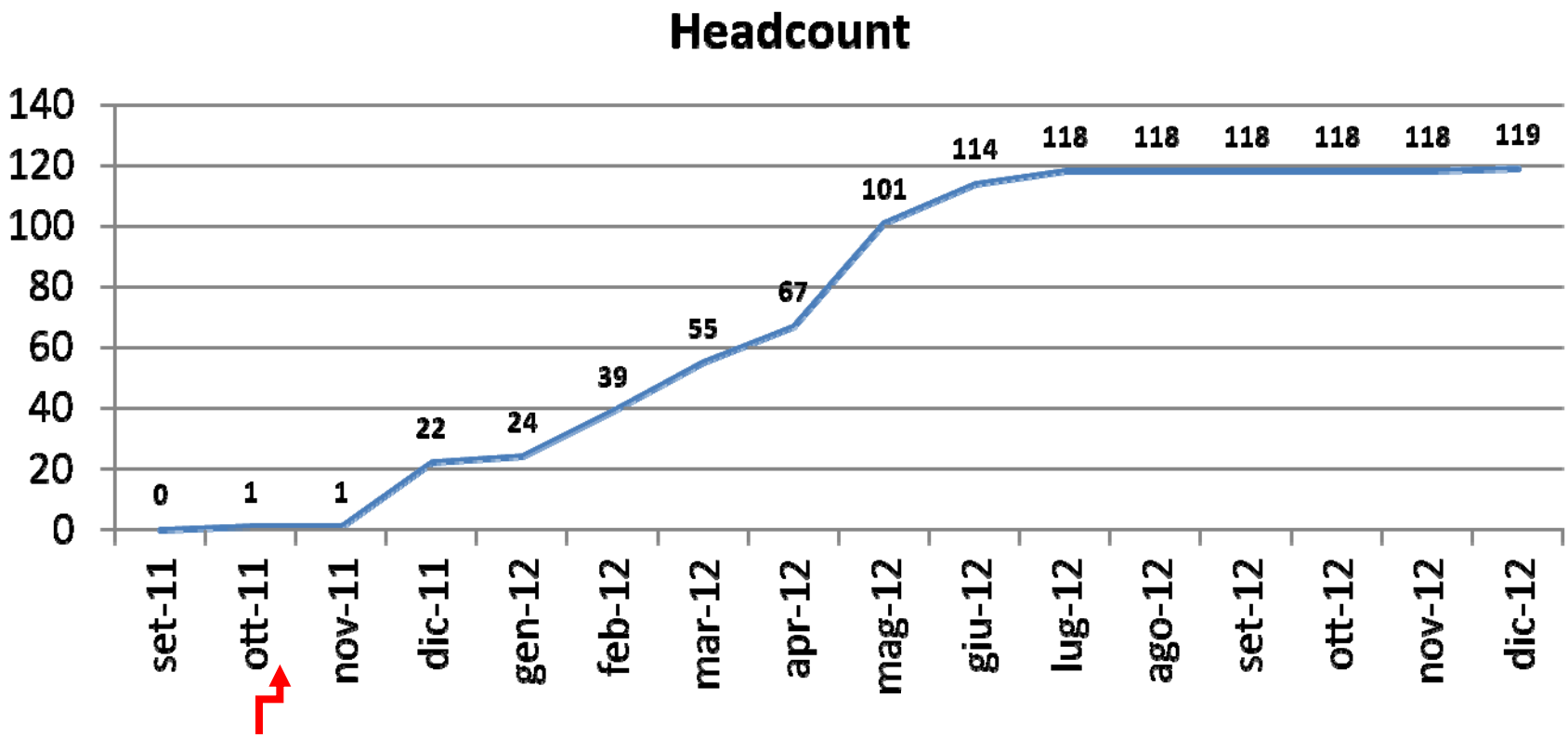
7..START-UP CHALLENGES

Keys of Success – Anticipate Recruitment of Key Personnel during Commissioning



7..START-UP CHALLENGES

Keys of Success – FullScale Recruitment Timing



Metro Brescia Srl Registered on 26/10/11

7..START-UP CHALLENGES

Keys of Success – Training Strategy for Operating Staff

D/B Team

Commissioning Activities

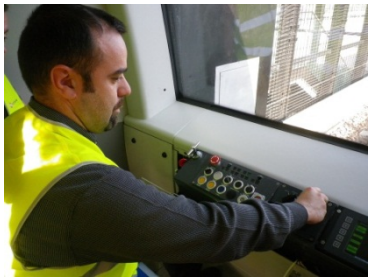
O&M Team

4/5 wks (STW)
8/12 wks (OCC)

Hold 1 | Re | Initial Training

Hold 2 | Re | Initial Training

.....



Training Completion

- Aptitude
- Procedures
- Drills
- Customer Service
- Safety
- Security
- Quality
- System familiarization

Trial Run

Exams with Authorities

7..START-UP CHALLENGES
Keys of Success – Training Plan

Operation

	Training Program (Months)	On-the-Job Training (Months)
Stewards	2,5	3
OCC Operators	3	4

Maintenance

	Training Program (Months)
Rolling Stock	2
Power Supply	1
ATC/Telecom/SCADA/PSDS	3
Civil Works	0,5
Track	0,5
Station Installations	1

7..START-UP CHALLENGES
Keys of Success – Operator's Empowering

- Empowering
- Awareness
- Ownership
- Readiness

8..SERVICE PERFORMANCES

Service Availability (SA)

«…is the probability that a passenger arrives on time or with a delay shorter than the planned headway…»

(all planned departures from all stations directions are contributing to the calculation)

Example:

•On a week day we have:

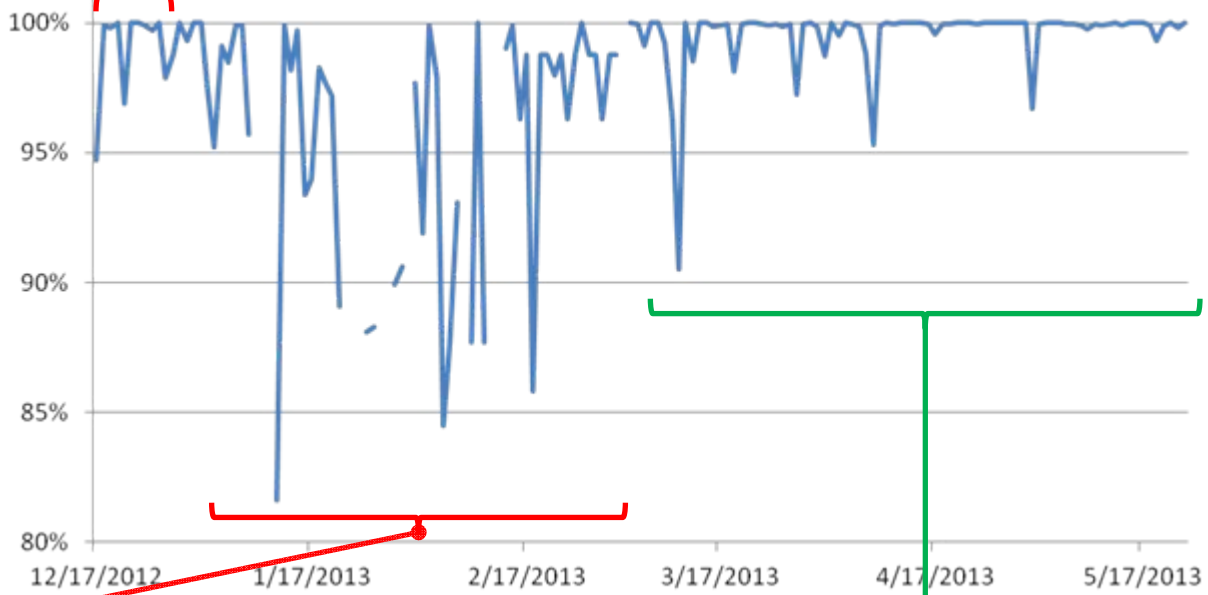
- *6/9 minutes headway plan*
- *Around 4.100 Planned Departures*

•A daily SA of 99,9% means that only 0,1% of passengers, in average, arrived beyond 6 or 9 minutes schedule.

8..SERVICE PERFORMANCES

SA Growth through Trial Run and Revenue Service

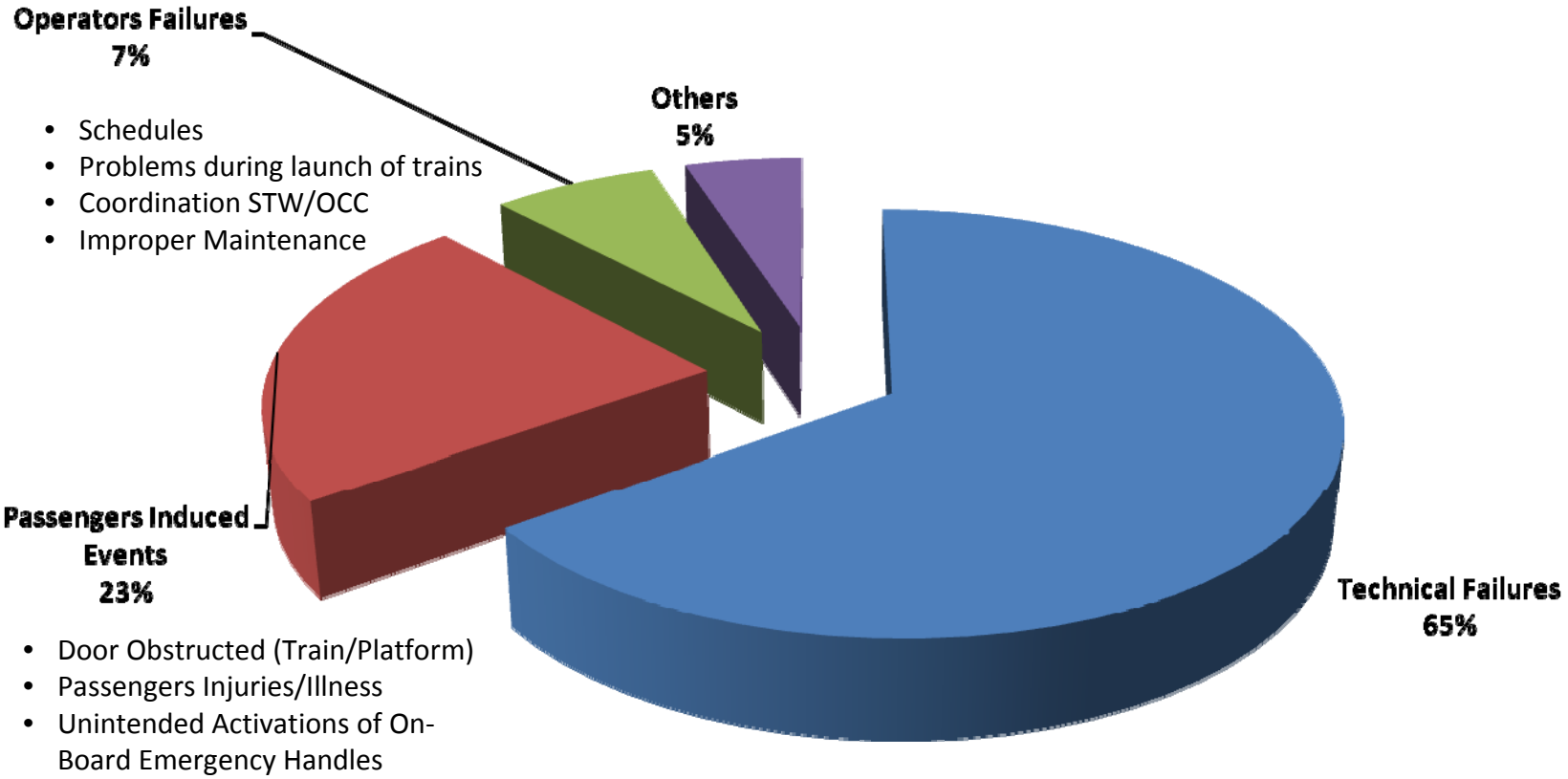
System Demonstration
(10 days - 17/12/12 to 27/12/12)
Avg. SA 99%
Contractual Target 96,5%



Trial Run Period
(21/12/2012 – 02/03/2013)

Revenue Service – Avg. SA 99,6% - Contractual Target is 98%

8..SERVICE PERFORMANCES
SA Killers categories after 3 Months



- Schedules
- Problems during launch of trains
- Coordination STW/OCC
- Improper Maintenance

- Door Obstructed (Train/Platform)
- Passengers Injuries/Illness
- Unintended Activations of On-Board Emergency Handles

AnsaldoBreda
a Finmeccanica Company

Metro Honolulu

HART Visit to Europe

Pistoia June 3th, 2013

- *AnsaldoBreda a Finmeccanica company*

- *ANSALDOBREDA*
  - *Organizational Chart*
  - *Business Profile & Products*
  - *US project*
  - *Competences & Industrial Structure*

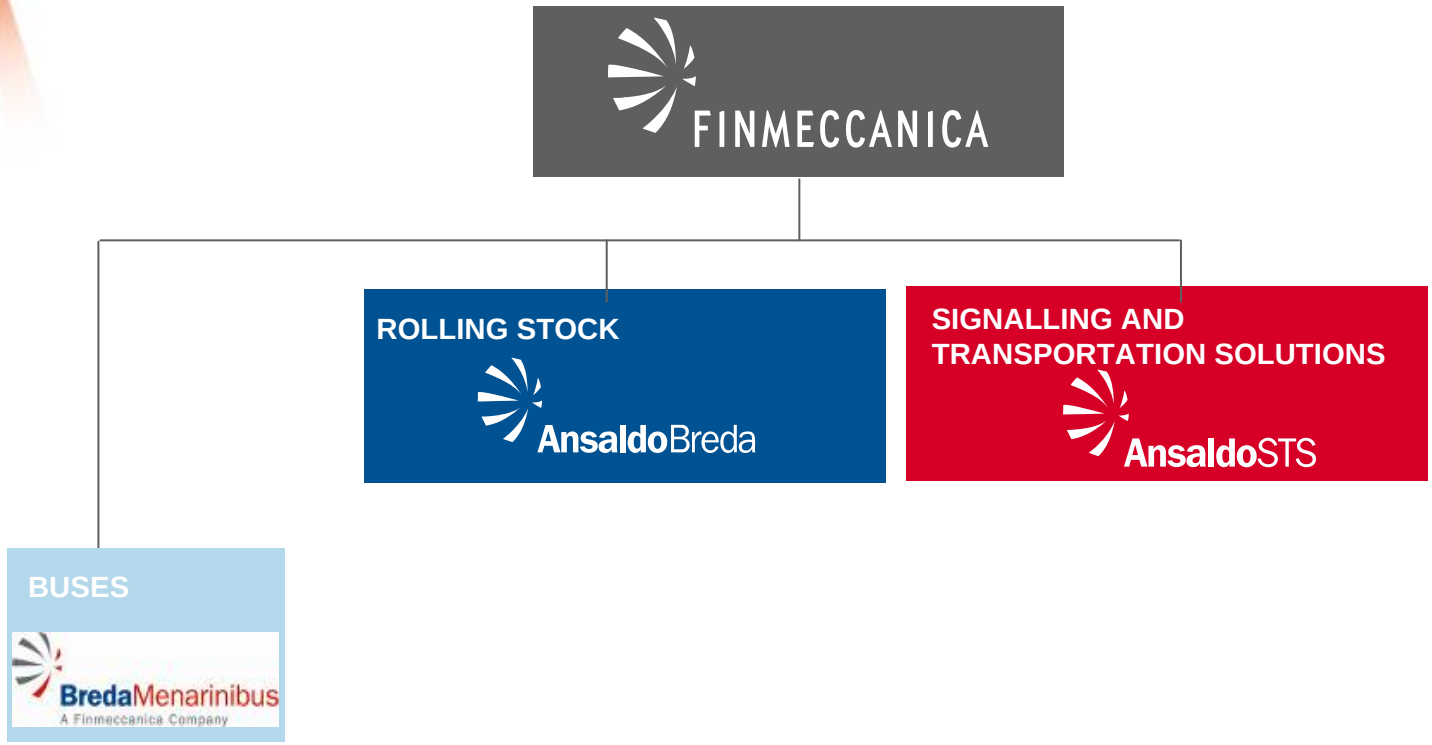
- *METRO HONOLULU: topics*

- Italy's largest manufacturing group
- Strong orders backlog

AERONAUTICS	HELICOPTERS	SPACE	DEFENCE & SECURITY ELECTRONICS	DEFENCE SYSTEMS	ENERGY	TRANSPORTATION
Alenia Aeronautica	AgustaWestland	Telespazio	DRS Technologies	Oto Melara	Ansaldo Energia	AnsaldoBreda
Alenia Aermacchi	BAAC	Thales Alenia Space	Elsag Datamat	WASS	Ansaldo Fuel Cells	Ansaldo STS
Super Jet International			SELEX Communications	MBDA	Ansaldo Nucleare	BredaMenarinibus
ATR			SELEX Galileo			
Eurofighter GmbH			SELEX Sistemi Integrati			
GMAS			SELEX Service Management			
			Seicos			

Owned Company

Joint Ventures


FINMECCANICA
ROLLING STOCK
AnsaldoBreda
SIGNALLING AND TRANSPORTATION SOLUTIONS
AnsaldoSTS
BUSES
BredaMenarinibus
A Finmeccanica Company

Building rolling stock for more than 150 years...

1853

Establishment of "Giovanni Ansaldo" Company

1886

Establishment of "Ernesto Breda" Company

1898

Steam Locos exported to Denmark, Romania and other States

1939/1952

World Speed Record 200 Km/h
1° High Speed train in regular service in Italy 200 km/h

2001

Operations merged into ANSALDOBREDA

Italian locations and Plants

- Naples
- Pistoia
- Reggio Calabria
- Palermo

Subsidiaries/Branches abroad

- USA
- Spain
- France
- Norway
- Denmark
- Greece
- Morocco
- Taiwan

ANSALDOBREDA: AN INTERNATIONAL PLAYER SERVING THE GLOBE WITH LOCAL RESOURCES

BU Mass Transit

BU Main Line & HSL

- **Belgium/Netherlands**
  - V250
- **Denmark**
  - IC2/4

- **Birmingham**—LRV
- **Manchester** —LRV

- **Gothenburg** - Sirio

Norway

- NSB class 72

- **Copenhagen**—LRV driverless

- **Thessaloniki**—LRV driverless
- **Athens**—Sirio

- **Miami**—HRV *(award)*
- **Atlanta**—HRV
- **Los Angeles**—LRV & HRV
- **Washington**—HRV
- **San Francisco** – LRV
- **Boston** – LRV
- **Cleveland** – LRV
- **Seattle** - Trolleybus

- **Madrid**—HRV

- **Taipei**—LRV driverless

- **Samsun**—Sirio
- **Keyseri**—Sirio

- **Fortaleza**—LRV

Morocco

- TAF

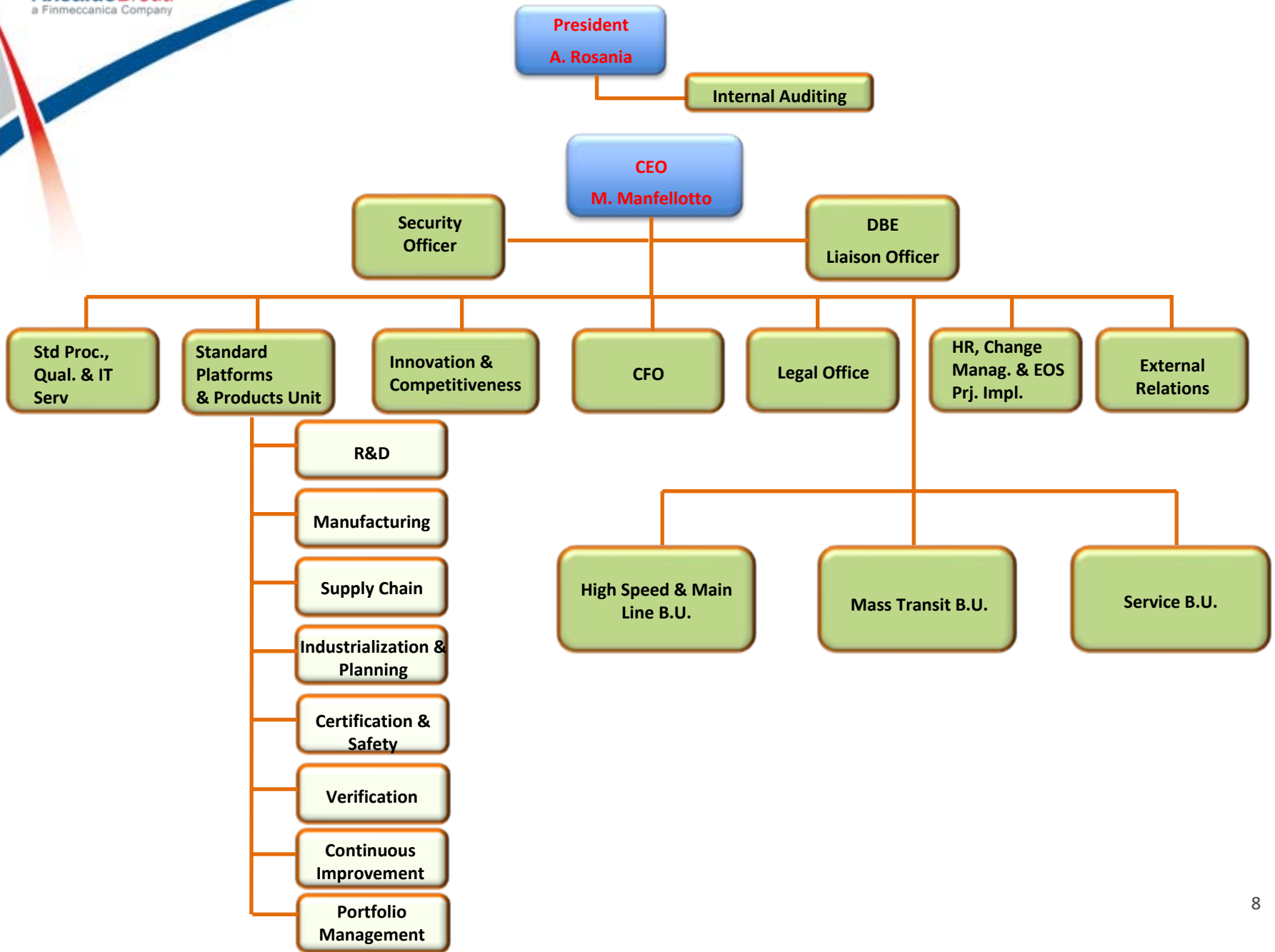
- **Italy**
  - V300-Zefiro (ETR 1000)—VHS
  - ETR 500–VHS
  - Vivalto—coaches
  - TSR —regional
  - E402 / E403 - Loco

- **Italy**
  - Milan Meneghino—HRV
  - Metro C Rome—HRV driverless
  - Milano Line 5—LRV driverless
  - Metro Genoa—LRV
  - Genoa – Sirio
  - Naples Circumvesuviana – LRV
  - Florence – Sirio
  - Bergamo – Sirio
  - Naples – Sirio
  - Sassari – Sirio
  - Milan – Sirio
  - Brescia – LRV driverless

- **Riyadh**—LRV driverless

7

ANSALDOBREDA ORGANIZATIONAL CHART



High Speed

ETR1000

ETR500 3kVdc/25kVac

V250 EMU

Intercity

DMU

Locomotives

Coaches

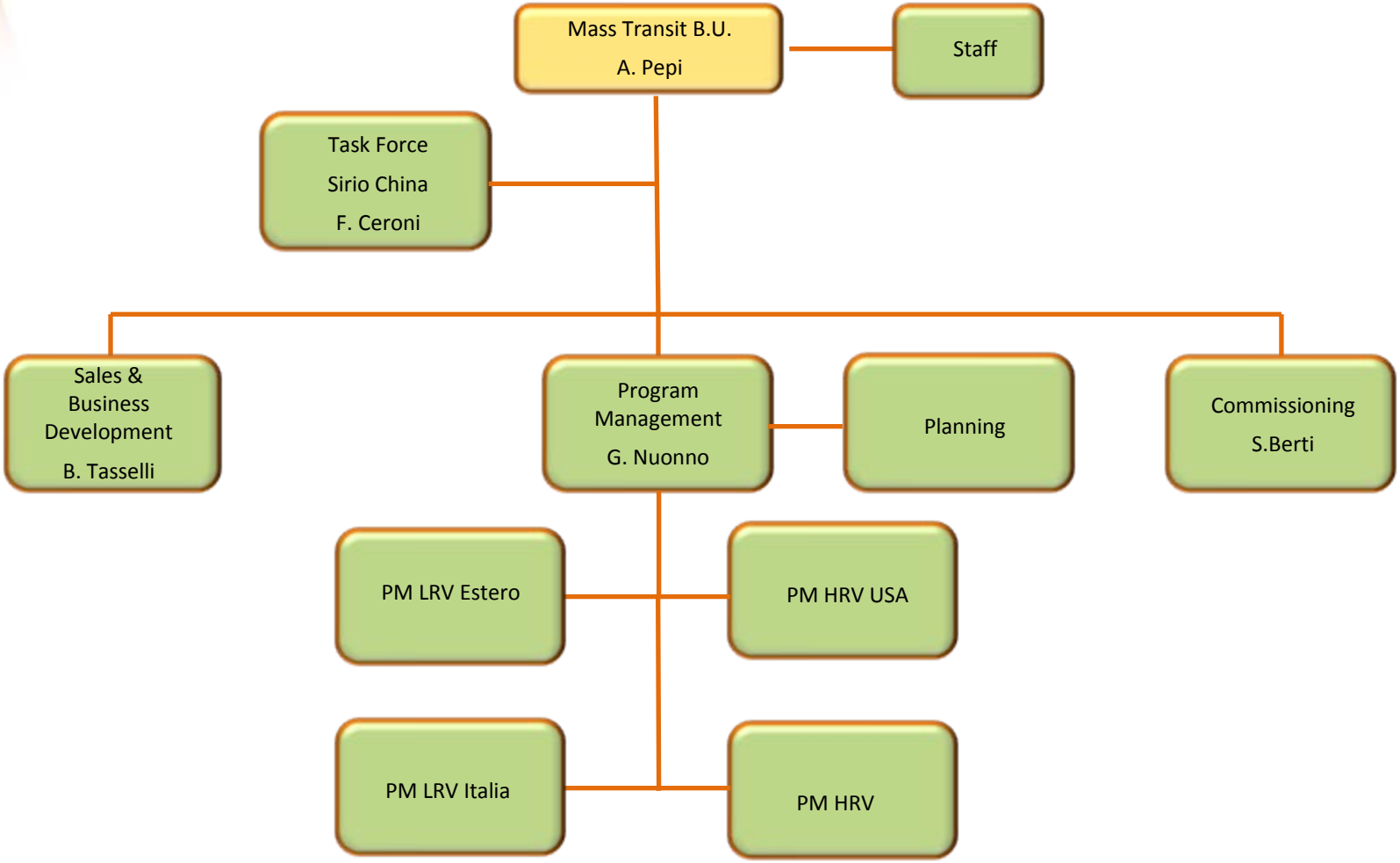
Regional /Suburban

Double deck EMU

Single deck EMU

TSR double deck EMU

MASS TRANSIT BU - ORGANIZATIONAL CHART



AnsaldoBreda
a Finmeccanica Company

MASS TRANSIT VEHICLES

Taipei

Roma

Milano HRVs

Thessaloniki

Riyadh

Milan L5

Fortaleza

Copenhagen Driverless

Metro Honolulu

Miami

Metro Madrid HRVs

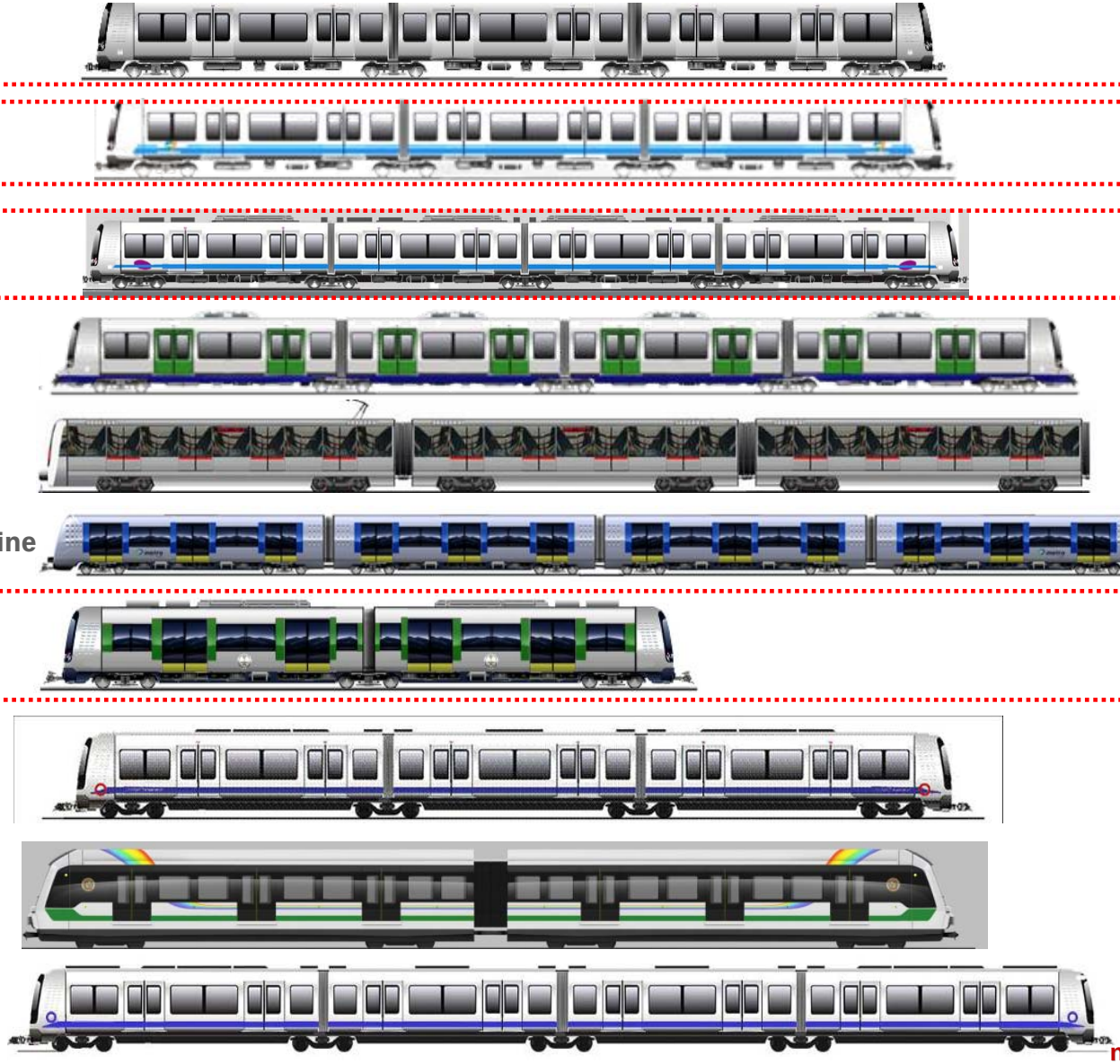
Circumvesuviana HRVs

Brescia Driverless

Total: 275 Vehicles

in service

Copenhagen	34
Brescia	18
Milan Line 5	21
Thessaloniki	18
Rome C	30
Taipei Circular Line	17
Riyadh	22
Copenhagen Cityringen	28
Honolulu	40
Milan Line 4	47

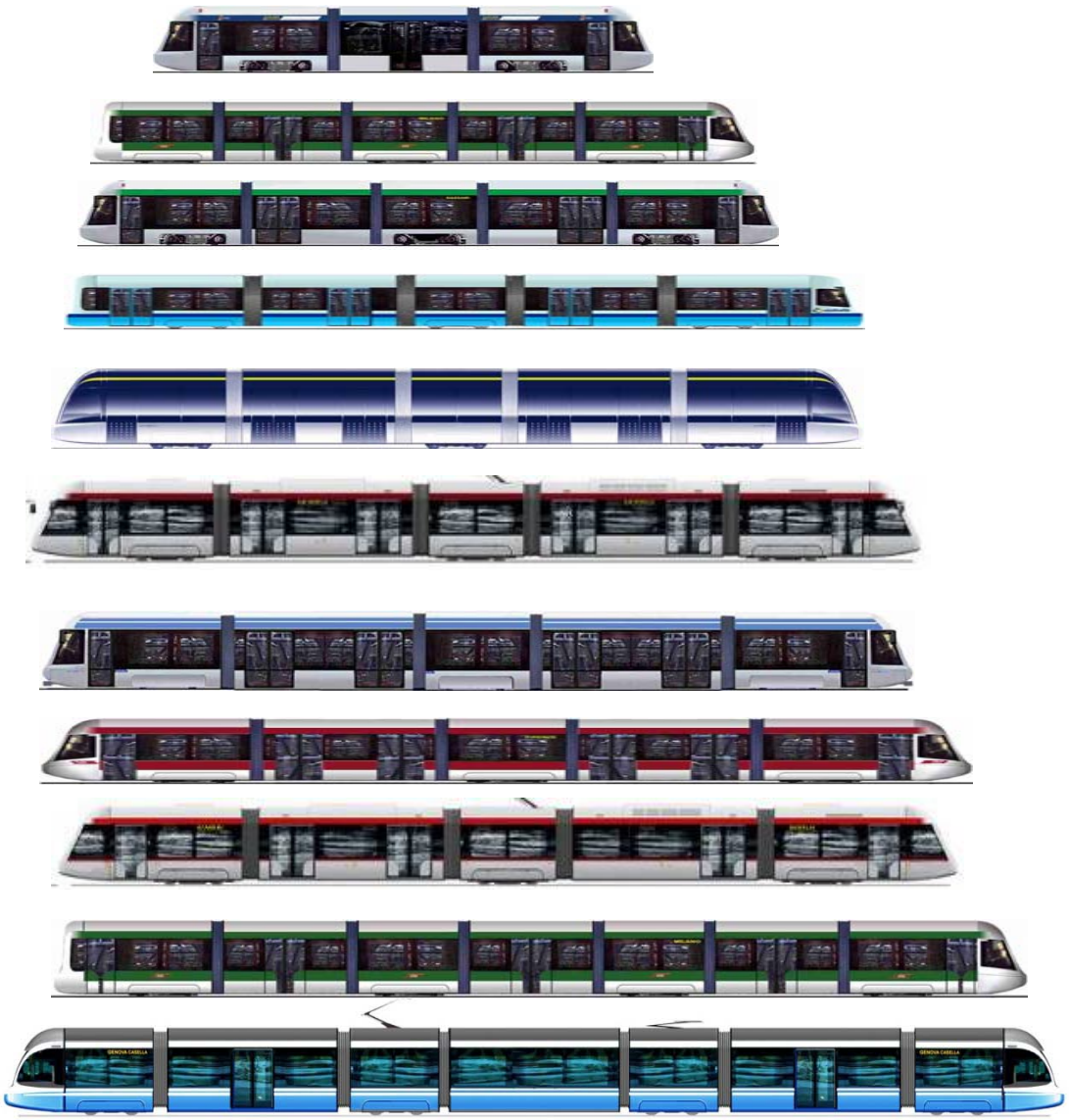


not in scale

PRODUCTS PORTFOLIO OF 100% LOW FLOOR TRAMWAYS

Total: 357 Tramways

Naples	22
Milan 2-3	68
Sassari Gauge: 950 mm	4
Gothenburg	65
Bergamo	14
Florence	46
Athens	35
Kayseri	38
Samsun	16
Milan 1	48
Tram - train Genova Casella Gauge: 1000 mm	1



USA			Rest of the World	
Trains	Cars		Trains	Cars
335	670	HRV	175	852
344	688	LRV	132	511
679	1358	Total	307	1363
Trains	Cars		Trains	Cars

AnsaldoBreda:

- 50% of 2001-2009 AB Sales out of Italy
- 50% of 2001-2009 AB Sales are Metros
- Almost 50% of metro cars ever produced by AB were sold in the US

ABOUT ANSALDOBREDA in US

- Entered market 40 years ago
- Presently headquartered in California
- Produced 1,019 new rail cars / 236 trolley buses
- Overhauled 535 rail cars / 220 trucks
- Generated over $3 billion USD in sales
- Operated 8 different sites
- site in operation today: Pittsburg, CA

REFERENCES IN THE US

Washington
WMATA

Los Angeles
LACMTA

Atlanta, GA
MARTA

Cleveland, OH
GCRTA

San Francisco
SFMTA (MUNI)

Boston
MBTA

Los Angeles
LACMTA

Vehicle System Integrator

Customer Support & after sales Service

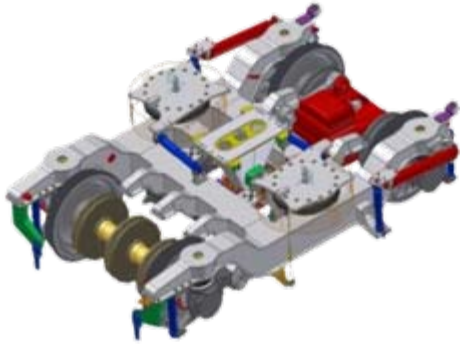
Assembly, Testing & Qualification of vehicle system

Car bodies, trucks and mechanical components

Propulsion, APS, Vehicle Monitoring & Diagnostics System

Full Integration of Ansaldo STS signaling equipment

We Design & Manufacture every single Core Vehicle Component: we do not manage external suppliers!



Capabilities

- **Design** and **manufacture** of complete vehicles
- Design and manufacture of mechanical parts (body, bogies)
- Design and manufacture of traction and auxiliary equipment (converters, motors, controls)
- Service: Revamping, **Maintenance, Upgrading**
- IRIS certification

Tools

- **Laboratory** for vehicle experimentation and validation
- **Testing circuit** for mass transit vehicles also with integrated automation
- **Climatic Chamber**
- Laboratory for structural testing
- **Test track**
- Laboratory for electromagnetic compatibility
- Laboratory for acoustic and vibration testing

Design/Engineer Dept.

Pistoia

- Carbody Structure Design
- Truck Design
- Vehicle Mechanical Design
- Vehicle Mechanical & Architecture Design
- Vehicle Dynamics

Napoli

- Vehicle Electrical & Architecture Design
- Train Control and Monitoring System
- Traction Inverter Design
- Traction Motor Design
- Traction Control Design
- Auxiliary Converters Design
- Control Equipment Design
- Software Design
- Software V&V

- Roller bench test facility for vehicle experimentation and validation

Max weight

120 t

Max speed

300 km/h

Max axle effort

100 KN

Max power

8 MW

Power supply

500 - 4000 Vdc
25kV 50 Hz
15kV 16 2/3 Hz

- Roller bench test for vehicle experimentation and validation

- **Max weight**
  Test Tracks
  120 t

  Max axle effort
  100 KN

  Max power
  8 MW

  Power supply
  500 - 4000 Vdc
  25kV 50 Hz
  15kV 16 2/3 Hz

Max speed

2625 feet Test Track

- Roller bench test for vehicle experimentation and validation

- Test Tracks

- Climatic Chamber

Dimensions: approx. 7 m x 37
Testing temperature range: -4
Climatic testing on complete

IN HOUSE FACILITIES

- Roller bench test for vehicle experimentation and validation

- Test Tracks

- Climatic Chamber

  Dimensions: approx. 7 m x 37 m
  Testing temperature range: -40 °C / +50 °C
  Climatic testing on complete vehicles and equipment

- Laboratories for structural testing

  Carshell static and Bogie fatigue tests

  Two 5 x 3,5 m benches

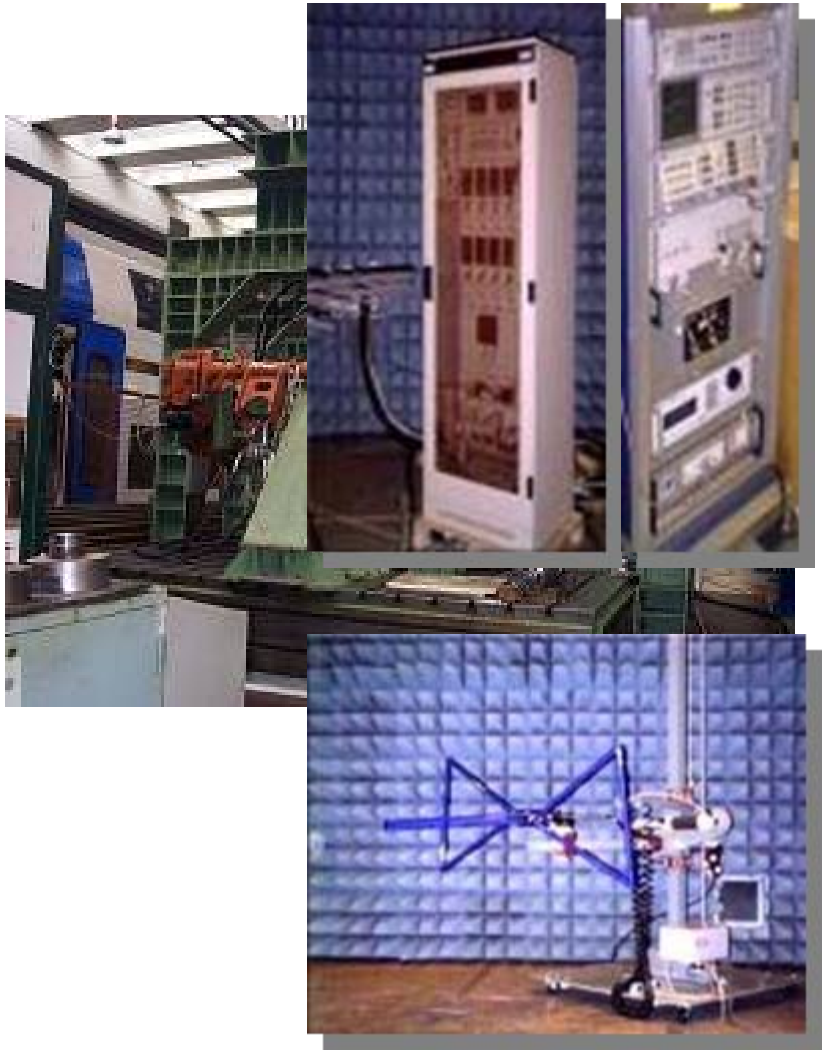
  Test frequency: up to 2 Hz

  Loads: from 5 to 80 t

  14 load actuators

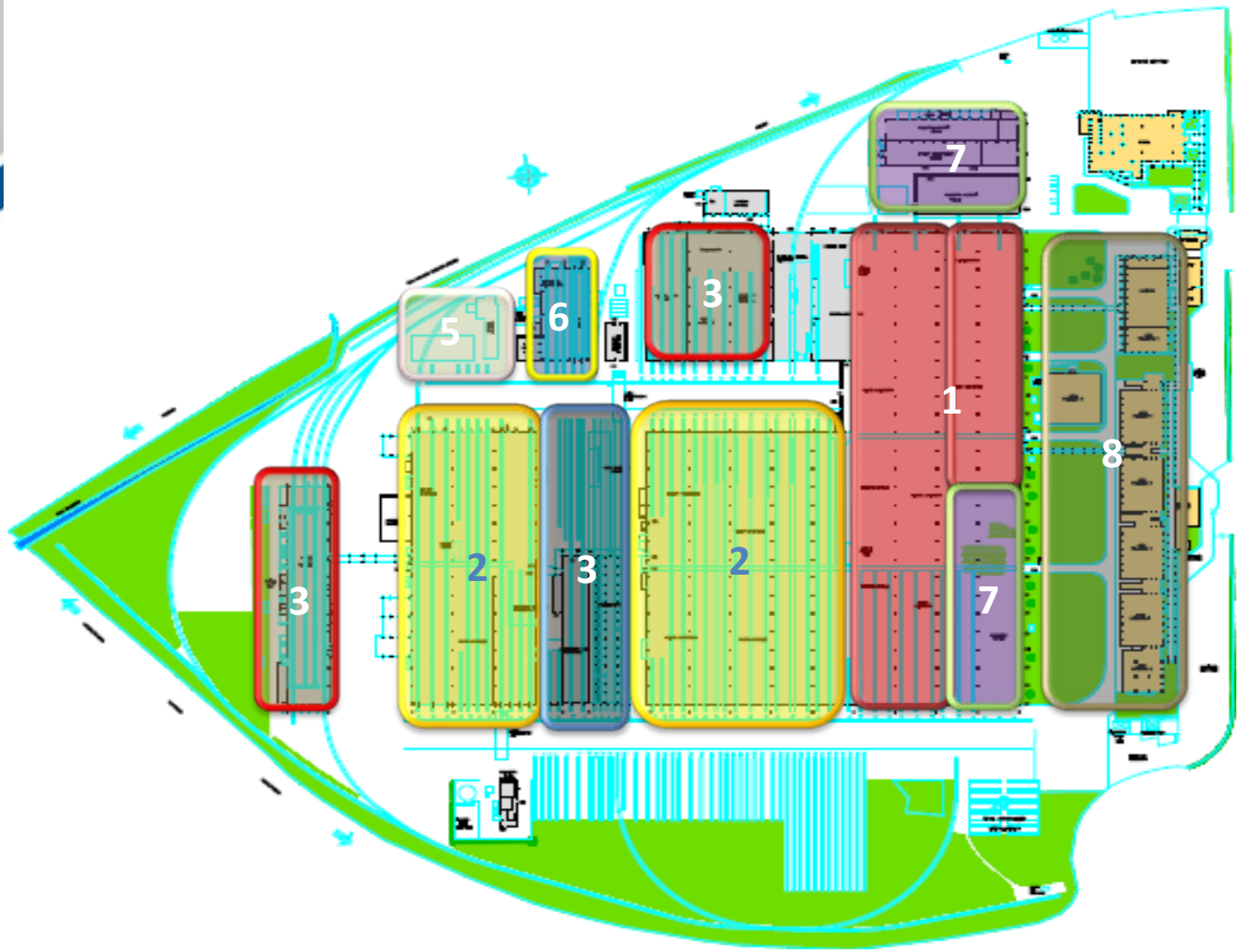
IN HOUSE FACILITIES

- Roller bench test for vehicle experimentation and validation
- Test Tracks
- Climatic Chamber
- Laboratories for structural testing
- Laboratories for EMC, EMI, acoustic and vibration testing
  Bogie fatigue tests



Equipment
- Anechoic chamber: dimensions 9 x 3,5 x 5 m
- Mobile laboratory

Type of tests
- Tests of susceptibility to radiated and conducted emissions
- Frequency range: from 14 kHz to 1 GHz



Pistoia Plant

1.Carpentry
2.Assembly Line
3.Paint Shop
4.Functional Test Area
5.Climate Room Test
6.Structural Test Lab
7.Warehouse
8.Offices

Subject to be discussed

•Welding Process & Certification
•Production Line Beat Rates
•Paint process
•Structural Test
•Climate Test

….. To be Continued

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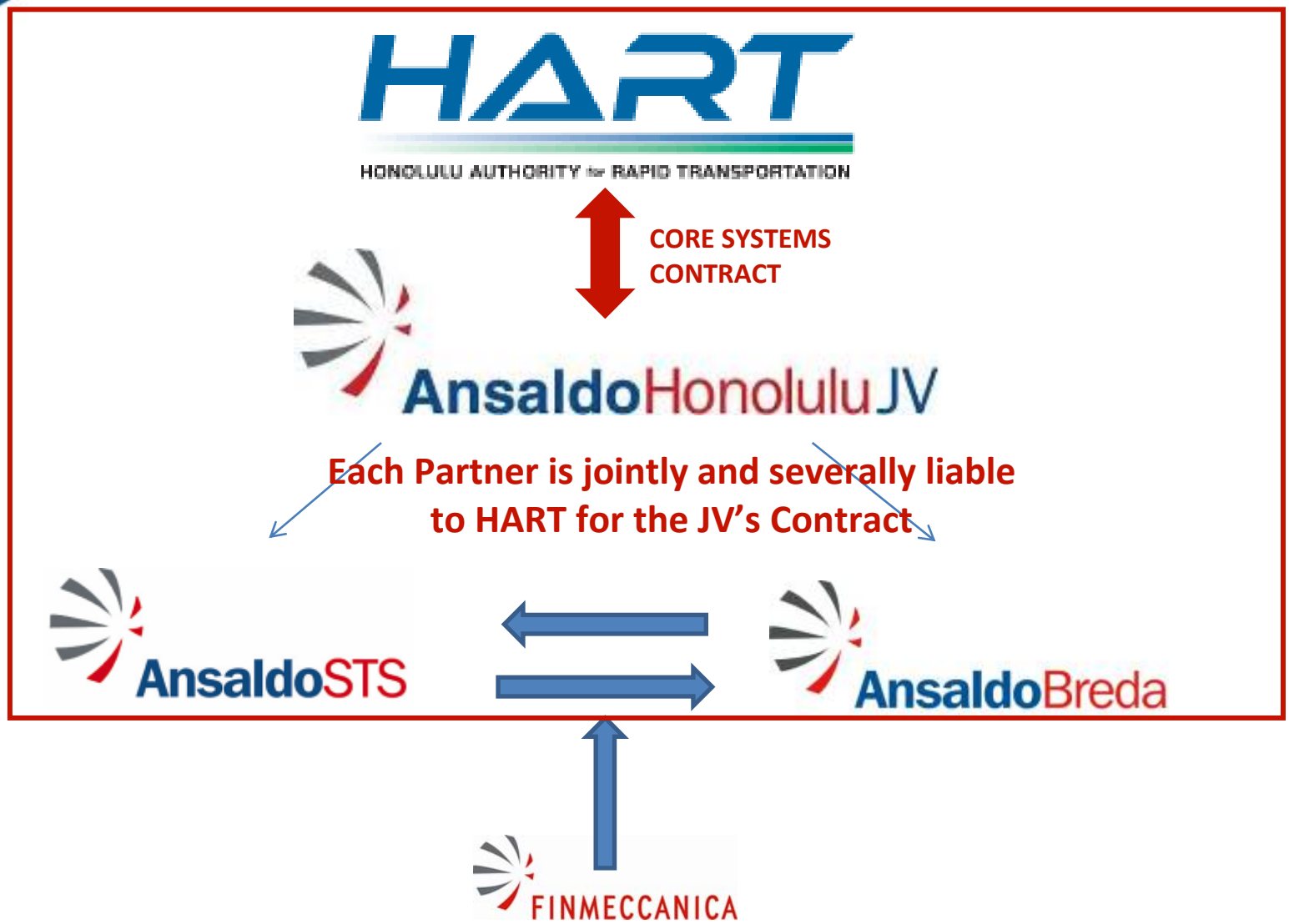
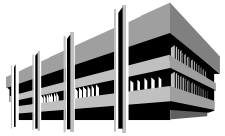
Metro Honolulu Topics…..



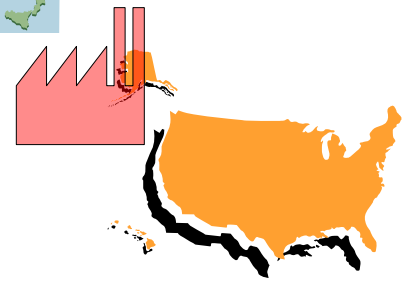
Finmeccanica ensures the AHJV obligations regardless of any change in ownership or financial capacity of the partners



DESIGN

- *AB S.p.A. - ITALY*

- *carshell- ITALY*
- *inverter components e TCMS - make ITALY*



MANUFACTURING

- *truck frames – buy USA (formerly Buy Italy)*
- *traction inverter & aux.system - make USA*
- *final assembly cars & trucks – USA supply chain of buy USA*

COMMISSIONING/TEST

- *Commissioning & Testing Honolulu*

Italy

- Manufacturing of Sub Components
- Carshell Assembly and Insulation
- Carshell Water Tightness Test
- TCMS Assembly
- Inverter Modules manufacturing

Pittsburg, CA

Only pilot cars or entire fleet in case Miami HQ should not be implemented

- Supply Chain Of Buy USA
- Final Assembly Activities:
  - Wiring
  - Flooring
  - Underframe Installation
  - Interiors Installation
  - Roof Mounted Equipment Installation
- Trucks Assembly
- Inverters Manufacturing & Testing (entire fleet)
- Routine, Production and Pre Shipment Test

Honolulu, HI

- Post Shipment Test
- Acceptance Test
- Qualification Test
- System Integration Test
- Trial Run

Italy

- Design & Engineering
- Manufacturing of:
  - Carshell
  - Inverter Modules
  - TCMS

Pittsburg, CA

- Supply Chain Of Buy USA
- Propulsion Inverter Manufacturing
- Series Vehicles Final Assembly
- Vehicle Testing
- Truck Assembly

Honolulu, HI

- Vehicle Commissioning

BUY AMERICA

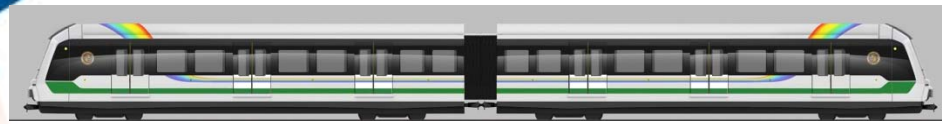
- "Buy America" will be achieved through a consolidated industrial scheme:
  1. Carshell Structures - Italy
  2. TCMS - Italy
  3. Truck Frame – buy USA (formerly Buy Italy)
  4. Traction Inverter & Aux. System - USA
  5. Other Sub Systems - USA
  6. Final Assembly Vehicle & Bogies - USA
- The industrial scheme has been improved for the American content respect to Atlanta/Los Angeles HRVs
- 'Buy America' Pre-Award Audit - in august 2011 -

  69.3% achieved

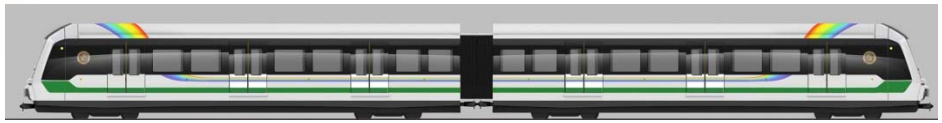
AnsaldoBreda
a Finmeccanica Company

As Beautiful as your City!!!

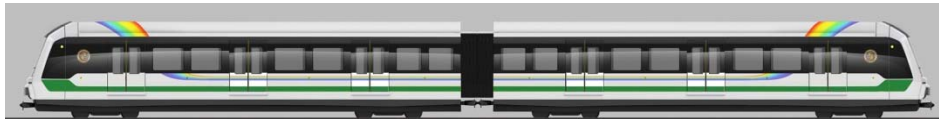
WHY ANSALDOBREDA?



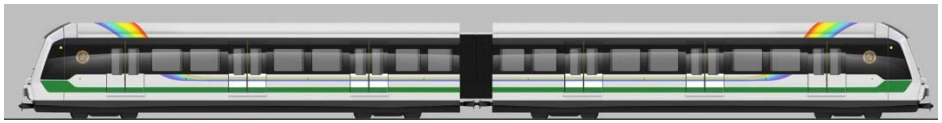
150 Year Passion for Trains



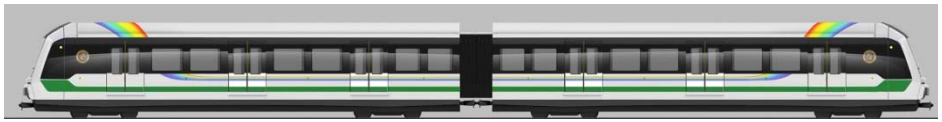
Global Experience – Local Implementation



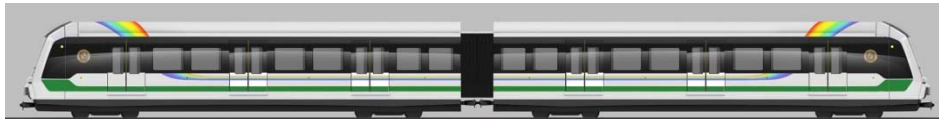
Italian Design



40 Years of Successful American Presence



Strong Focus on Mass Transit Business



In house Production of all Core Components