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EXECUTIVE MANAGEMENT AND AUDIT COMMITTEE
MARCH 15, 2007

SUBJECT: FACILITY-WIDE SOLAR PANEL INSTALLATION STUDY AND PROJECT IMPLEMENTATION PLAN

ACTION: RECEIVE AND FILE

RECOMMENDATION

Receive and file a report on the feasibility of installing solar panels at all Metro bus and rail facilities, an analysis of the financial feasibility of such a project, the evaluation of “low capital” and “no capital” financing alternatives, and plans for Metro to move forward with solar panel installations in a fiscally prudent manner.

ISSUE

During discussion of the Division 18 Solar Generation project at the October 2006 Board meeting, it was requested that staff report back to the Board with a three-year comprehensive plan to install solar panels on all Metro bus and rail facilities in cooperation with the Los Angeles Department of Water and Power (LADWP), the Southern California Gas Company (Gas Company), and Southern California Edison (SCE) (Attachment A).

This report responds to this request and contains plans for moving forward with additional solar panel installations.

DISCUSSION

Upon receipt of the motion in October 2006, staff formed a multi-disciplinary team to study the feasibility of all Metro sites and facilities for installation of solar panels. The group consisted of representatives from Bus Facilities, Rail Facilities, Real Estate, and General Services. The team was tasked with evaluating each and every Metro facility (including bus maintenance facilities, rail maintenance facilities, warehouse buildings, rail stations, the Union Station/Gateway (USG) complex, park and ride lots, bus terminals, and other facilities) to determine which facilities presented feasible opportunities for the installation of solar panels. The criteria used to evaluate the facilities included available square footage, utility service, building structural issues, cost/return on investment analyses, and the potential for future joint development.

Results of Agency-Wide Survey

Out of approximately 200 Metro facilities agency-wide, staff developed a list of 38 facilities that presented feasible opportunities for the installation of solar panels. In general, the locations include bus maintenance facilities, rail maintenance facilities, the USG building parking structure, and various park and ride lots across the rail and bus system. These facilities were selected primarily due to the amount of feasible square footage available, the absence of potential joint development opportunities which would conflict with solar panel installations, and cost recovery analyses that suggested 11-20 year paybacks (assuming rebates).

Facilities determined not to be feasible included subway stations, light rail station canopies, and facilities with pending joint development opportunities (i.e. Universal City, North Hollywood, etc.). Although initially attractive to the team, light rail stations and canopies were determined to be infeasible for solar panel retrofits due to the high cost of installation, architectural issues, and the lack of available canopy square footage. Even though these projects were deemed infeasible for retrofits, Metro recommends that design of future light rail canopies and other passenger structures shall evaluate the usage of solar panels or other renewable energy strategies in their construction.

The 38 facilities selected as feasible installation opportunities have a total usable square footage of 2,573,797 square feet (or 59 acres) and are spread across the bus system and all rail and bus rapid transit (BRT) lines. The facilities are located within either SCE or LADWP territories, and would all be eligible for utility rebates of approximately \$1.50/watt. The one project (RRC) already has an approved rebate of approximately \$2.50/watt. The calculated cost recover time for all of the 38 facilities would range from 11 to 20 years.

Of the 38 facilities selected, 24 of them are park and ride lots which are primarily developed with few structures. These parking lots can be outfitted with ample solar shade canopy structures; however, with no facilities there are little to no means with which to use the renewable energy generated. The solar-generated energy may be fed back into the traction power system. However, staff is uncertain to whether the electric utilities would allow such an arrangement. Staff will continue to work with the utilities, primarily LADWP, to determine whether this arrangement is feasible. Nevertheless, at this time the projects appear feasible and are discussed below.

A listing of the 38 selected facilities is included as Attachment A.

Status of California Public Utilities Commission (CPUC) Rebate Systems and Other Possible Funding Sources

The CPUC operates a Solar Generation Incentive Program (SGIP) that is typically administered by the local utilities, such as the Gas Company, SCE, and LADWP. Rebates are available to owners to subsidize the cost of solar installations or other self-generation projects, and are paid at the completion of construction. Metro has taken advantage of this program several times, with the first being the Divisions 8 & 15 Solar Generation Project.

The amount of rebates available has steadily decreased, from \$3.50/watt in 2005 to \$1.50/watt in 2007. While the SGIP program was designed to spur growth in solar installations and subsequently bring down the purchase cost of solar panels and the raw material needed to build them, unfortunately, these market conditions have not materialized to date. At this time the available SGIP rebates are decreasing, while the cost of solar panels is increasing. This condition results in cost recovery analyses higher than those achieved with the Division 8 & 15 project (8 years), and also higher than the results we intend to achieve with the Division 18 Project (11 years). The Division 5 & 18 project was completed with an average rebate value of \$3.50/watt, and the Division 18 (and RRC project discussed below) Project will have an average rebate value of \$2.50/watt. The 38 feasible projects discussed in Attachment A (with the exception of RRC) would likely have rebate values averaging \$1.50/watt (likely 30% of construction costs), which push the cost recovery analyses closer to a 15-year average (dependent on size and location).

Staff also continues to evaluate other possible sources of funding, and is aware of incentive programs the South Coast Air Quality Management District (SCAQMD) will be shortly bringing to the solar market. Metro is very excited at the prospect of partnering with the SCAQMD on the financing of solar projects, and will continue to diligently search for solar panel and renewable energy funding other than the traditional SGIP rebates.

Traditional Capital Purchase Approach

The previously completed Divisions 8 & 15 Solar Generation Project, and the Division 18 Solar Generation Project that will be awarded to a contractor in March 2007, have used a traditional capital installation approach. Under this approach, Metro reserves available rebates from the utilities, procures a construction contract to install the panels, pays the installation costs up front, and takes advantage of the rebates upon job completion. The previous and current solar projects have used a design/build contracting methodology to complete the installations. This traditional approach to installing renewable energy projects (such as solar panels) yields the best results in terms of cost recovery. However, it requires relatively large sums of capital dollars to be spent up front in order to complete the projects.

After selecting the 38 feasible facilities as described above, staff estimated the construction costs, available rebates, net costs after rebates, and cost recovery for each facility. The cost data for each facility is summarized in Attachment A.

In summary, to install solar panels on all 38 feasible Metro facilities, the upfront costs for design and installation are estimated to total \$323,750,000. Given an average rebate of 30% of construction costs (dependent on system size), the available rebates could total approximately \$97,125,000, for a total end of project net cost of \$226,625,000 (current 2007 costs with no escalation).

As also shown on Attachment A, if Metro chose to concentrate only on rooftop or parking structure installations (13 facilities), which generally costs less than shade structures on parking lots, the total upfront construction costs would be \$68,600,000. After rebates, the net cost to Metro would be \$48,020,000.

Although this traditional construction and rebate approach would yield the best cost recovery figures, and Metro has employed this approach successfully in two previous projects, the high upfront cost of such a program is not currently feasible, and therefore not recommended.

Alternative Financing

In an effort to meet the goals and intent of the October 2006 motions, and to further Metro's sustainability programs in an era of low capital availability, staff conducted market research and met with several private solar installers and financing entities that specialize in "low-capital" or "no-capital" solar installation scenarios. After several meetings and significant research, staff has determined that there are two distinct alternative financing models that can be employed to further Metro's solar installation and sustainability goals, without high upfront capital costs. These financing models are described below.

Alternative #1: Public-Private Partnership/Performance Contracting

As an alternative to a traditional capital purchase approach, Metro could use a "performance contracting" approach, which would essentially be a public/private partnership between Metro and the contractor. Using performance contracting, the contractor is responsible for all facets of the project, including project financing, project design, implementation, maintenance, measurement and verification. Under this scenario, Metro could engage a contractor who finances the project, then pays the financing costs by utilizing the savings generated by the solar installation. The remaining savings would go to Metro. The contractor would own the installation over the contract, leasing the system back to Metro, and would ensure that system performance is achieved in order to meet their performance obligations. This approach has been popular with many public agencies, particularly the Los Angeles Community College District, since it can provide immediate savings and benefits without expending large amounts of capital funds.

Metro staff is currently planning to use this performance contracting approach on the Regional Rebuild Center (RRC) located adjacent to Metro headquarters, where rebates for solar panels have been reserved but for which there is no allocated funding to complete the project. Metro's RRC was constructed in 1985 and performs central maintenance, painting, restoration, and engine rebuilds for Metro's fleet of nearly 2,700 transit buses. Aside from bus maintenance and rebuild functions, the facility also houses administrative offices, Operations Central Instruction, Stops and Zones, and the Central Warehouse for all Metro operations.

Nearly 75% of the energy costs (natural gas and electricity) for the RRC are for lighting and heating, ventilation, and air conditioning (HVAC) equipment. Based on the results of energy audits, staff is planning to "green" the facility by performing upgrades to all RRC shop and lighting equipment, replacing HVAC equipment, optimizing compressed air systems, installing energy management systems and state of the art lighting controls, and constructing a photovoltaic solar panel roof system totaling approximately 1 megawatt in size. After \$3.4 million in rebates and incentives (already reserved), the project would cost

approximately \$9.2 million, and electricity bills at the RRC would be immediately reduced by approximately 46% (from \$1,093,839/year to approximately \$550,000/year).

Since Metro does not currently have the funds to construct sustainability projects of this magnitude, staff researched the possibility of using the performance contracting approach on this project. Given a startup goal that the energy conservation measures and solar panels had to be a net profit from the start, staff used a \$2,000,000 “down payment” in the calculation of a financing pro forma. A detailed pro forma depicting the manner in which this type of project can be successful, including yearly savings and amortization, is included as Attachment B.

In summary, a performance contracting approach for the RRC greening project would have the following estimated parameters and financial assumptions:

- Project Cost: \$12,622,523
- Rebate at end of construction: (\$3,402,303)
- Net Project Cost: \$9,219,221
- Down Payment: (\$2,000,000)
- Capitalized Interest: \$340,173
- Net Financed Amount: \$7,559,393
- 20 year financing at 4.5%
- First Year Savings: \$544,134
- First Year Finance Cost (\$485,034)
- First Year Net Savings: \$59,100

As shown above and in the attached pro forma, if Metro completed the proposed project using this approach, the Agency would realize yearly savings of approximately \$59,100 over the life of the 20 year financing. As soon as the 20 years is over, ownership would revert back and Metro would realize yearly savings ranging from \$241,000 to \$276,000 for the remaining life of the systems (system life is 30 years or greater).

Staff believes that this approach is an extremely beneficial tool to embrace renewable energy generation and energy conservation without spending large amounts of capital dollars that could be used to further our primary agency goals of providing mobility to Los Angeles County. Further, staff already has rebates reserved for this project at the value of \$2.50/watt, which would be reduced to \$1.50/watt in the future if we did not move forward on this project within 2007.

As for the \$2,000,000 in “down payment” funds shown on the analysis, this cost is an estimate since a down payment would be negotiated with the contractor as part of contract negotiations for terms and financing. However, when the Division 18 Solar Project is completed in September 2007, Metro will be receiving a \$1,167,000 rebate from the Gas Company which can be applied to partially fund a project like this. Other supplementary funding would have to be identified at the time of Board adoption of the project.

At present, staff plans to proceed with the RRC “greening” project, at least through the procurement and negotiating phase, using the performance contracting approach. This would be a fiscally prudent first step in the solar energy installation plan requested by the motion. Further, the RRC is listed on Attachment A as the highest ranked project, and is a very visible facility across from Metro headquarters. This project would not only provide economic benefit to Metro, but it would be a model for all of Los Angeles on how to “green” a 20-acre heavy maintenance facility while reducing electricity usage and strain on the electrical grid. This project would also be a pilot project for Metro in terms of creative financing, and would provide a model for how agencies may finance renewable energy without expending capital dollars.

Staff is currently working on the Request for Proposal (RFP) with a plan to release them for competitive bidding by May 2007. In order to ensure the agency gets the best value, the process would likely consist of qualifications analysis, cost proposals, and finally, negotiations with qualified contractors. If staff is able to negotiate a satisfactory contract with a qualified bidder that provides the economic and environmental benefits we are striving to achieve, then staff will return to the Board for approval of the project including funding and the negotiated contract award.

Alternative Financing: Power Purchase Agreement

An additional alternative to a traditional capital approach, or even performance contracting, is the Power Purchase Agreement (PPA) approach. A PPA is an agreement between an energy provider and the customer (in this case Metro) in which the energy provider supplies the renewable power source and the customer agrees to purchase the energy produced at a fixed rate for a pre-determined length of time. Actual terms of a PPA are typically negotiated; however, most PPA agreements are for 20-25 years with an option to purchase the system for a fraction of the original cost any time after the sixth year of operation. In a PPA, the energy provider is responsible for rebates, financing, permitting, designing, installing, and operating the system. The customer’s responsibility is to provide the site for installation, provide access for ongoing maintenance, and to pay for the power generated at a negotiated rate.

The benefits to the PPA approach include the facts that there is no initial capital outlay and the customer only pays for the power produced. The price is fixed for the term of the contract, the PPA hedges against future utility increases, there are no maintenance obligations, tax credits are available, and there are purchase options available any time after the sixth year.

The primary disadvantage of this approach is that the customer usually does not experience a savings in electricity costs. Typically, the goal of both the energy provider and the customer is to approximate as closely as possible the rates of the utilities. In some cases, the PPA rates may be slightly higher than current utility costs, dependent on various factors such as rebates and location of the site. In addition, staff research indicates that PPAs are currently not permitted in LADWP service areas, since the LADWP does not allow third party financing and ownership of solar panel systems. Unless the LADWP rules are changed, this approach would only be feasible in non-LADWP service areas (such as SCE).

Although this approach does not generate savings in electricity costs, staff believes that this is another fiscally prudent approach to purchasing renewable energy sources and reducing our reliance on coal-powered electricity, without the expenditure of upfront capital dollars.

Without competitive bidding in the solar provider market, staff is currently unable to evaluate whether or not a PPA approach would provide the environmental or economic benefits we desire. For this reason, staff is planning to conduct a “pilot test” of this approach by picking the top 10 most feasible sites in the SCE or Long Beach Power service areas (Attachment A), and issuing a RFP for energy providers to submit bids for entering into PPAs for the suggested sites. Bidders would be free to select the sites that make the most economic sense, and propose installations on some, or all of the facilities. Metro and the successful energy provider could then negotiate the specific terms and energy rates of the PPAs for each site the energy providers are interested in. After negotiation, if the PPA terms are favorable to Metro, staff would return to the Board for approval of the negotiated PPA contracts and move forward with the projects.

Plan for Moving Forward with Solar Panel Installations

As summarized above, although Metro is highly committed to energy conservation and sustainability efforts, staff does not recommend installing solar panel systems on all of our facilities using the traditional capital purchase approach, since the cost to do so would exceed \$323 million, or even \$68 million for a small subset of our facilities (maintenance and headquarters buildings). The traditional capital purchase approach requires high upfront capital dollars that are just not currently available and would be better used to further our primary agency goals of providing mobility to Los Angeles County.

However, staff believes there are two distinct alternative financing methods that can be employed to further Metro’s solar installation and renewable energy goals, without high upfront capital expenditures. The two models, Performance Contracting and Power Purchase Agreements are extremely compatible with agencies such as ours with sustainability goals and scarce capital dollars for our infrastructure. Staff plans to demonstrate these approaches by competing them in the energy service provider market, as follows:

- **RRC Greening Project:** Staff plans to issue a Request for Proposals package for a Performance Contract to install over a megawatt of solar panels at the RRC. The project would also entail a complete efficiency upgrade of all major mechanical and electrical equipment within the facility. Metro would use the \$1,167,000 rebate for the Division 18 solar project to partially fund a down payment for this project. Staff is working to have the RFP documents ready for competitive bidding by May 2007. If staff is able to negotiate a satisfactory contract with a qualified bidder, staff will return to the Board for approval of the project funding and the negotiated contract on or around September 2007.
- **Power Purchase Agreements:** At this time staff is unable to evaluate the economic or environmental benefits of the PPA approach without competitive bidding within the

solar market. For this reason, staff plans to prepare a Request for Proposal package, for competitive bidding, to install solar panels on a maximum of 10 feasible sites using the power Purchase Agreement approach. Other than staff time, issuing an RFP would have no financial burden to Metro. If staff is able to engage a qualified energy provider and negotiate favorable PPAs which closely mirror the electricity rates we currently pay, staff would return to the Board to consider approval of the negotiated PPAs. Staff goal would be to have an RFP ready for competition by September 2007.

At the completion of these alternative financing demonstration projects, staff would analyze all of the cost and power generation data, and return to the Board recommendations regarding a path forward for future installation of solar panels and other renewable energy projects.

Required Project Staffing

In order to complete the proposed projects discussed in this report, there will be a significant need for staff time to manage and procure the projects. The magnitude of the proposed projects would require a Project Manager to guide these projects from the start of the RFP process, through procurement and construction, and into the measurement and operations process. At this time, there is no available Project Manager in the Facilities-Operations budget to manage projects of this type and magnitude. Therefore, staff plans to engage an energy management consultant to assist procurement and Facilities staff in accomplishing these projects.

Staff believes that in this volatile energy market, embracing sustainable and renewable energy sources is a primary pathway towards gaining control of Metro's energy costs. The proposed consultant would not only manage the solar projects discussed in the report, but would also aggressively seek new opportunities to finance and install renewable energy technologies. Since the Performance Contracting and PPA approaches do not require significant engineering and construction management resources, additional FTEs in these areas would not be required. Further, these two contracting approaches include maintenance and cleaning of the solar panels, which saves Metro the expense of cleaning and maintaining the solar panels to ensure maximum efficiency of the installations.

Schedule

Staff recognizes that the October 2006 motion requested a three-year comprehensive plan to install solar panels at all Metro facilities. Due to high cost, staff does not recommend installing additional solar panel systems using the traditional capital purchase methods. Using the Performance Contracting and PPA contracting methods, it will be possible to meet the intent of the motion within three years; however, a firm schedule cannot be developed until we are able to issue RFP's and negotiate terms with solar providers. At this time, staff plans to complete the Performance Contracting RFP for the RRC by May 2007. If bidding and negotiations are successful and the Board approves the contract, the RRC project could be complete as soon as September 2008. For the PPA contracting scenario,

staff hopes to have an RFP ready for competition by September 2007, with a goal of having solar panel systems operational by early 2009.

Financial Impact

As discussed above, staff plans to issue RFP's for the RRC "Greening" project and the PPA solar installation approach between May and September 2007. The labor and support costs leading up to a request for Board approval of the contracts are estimated to be as follows:

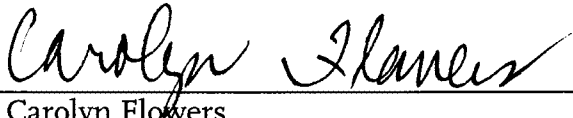
- Energy Management Consultant (effective April 1, 2007): \$200,000
- Support Depts. (Facilities, Procurement, EEO, Estimating, etc.): \$80,000
- Non-labor support (advertising, supplies, etc): \$10,000
- TOTAL for FY07/FY08: \$290,000

The funding of \$290,000 for FY07 and FY08 would be transferred from the FY07 Bus Facilities contingency project (local funding). This funding is available and is often used for project studies to determine if further capital expenditure is warranted. When/if staff returns to the Board for consideration of approving Performance Contracts or PPAs, staff will evaluate and report on the cost impacts associated with awarding the contracts and completing the solar installations.

NEXT STEPS

If staff is able to negotiate satisfactory Performance Contract's and PPAs that provide the environmental and economic benefits desired by Metro, staff will return to the Board for approval.

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ATTACHMENT A

ANALYSIS OF FEASIBLE METRO FACILITIES FOR SOLAR PANEL INSTALLATIONS

Division/Facility	Location	Utility	Usable Square Footage	Estimated Cost	Potential Estimated Rebates	Total Net Cost to Metro	Total KW	Minimum Return on Investment (Years)	Maximum Return on Investment (Years)	Ranking
Headquarters and Divisions										
CG Building	One Gateway Plaza, L.A.	LADWP	27,500	\$2,500,000	\$750,000	\$1,750,000	344	11	15	5
Division 1 (Central)	1130 E. 6th Street, L.A.	LADWP	20,130	\$2,400,000	\$720,000	\$1,680,000	251	14	19	8
Division 3 (Cypress Park)	630 W. Ave 28, L.A.	LADWP	45,840	\$5,800,000	\$1,740,000	\$4,060,000	573	15	20	13
Division 5 (Arthur Winston)	5425 S. Van Ness Ave, L.A.	LADWP	47,720	\$6,000,000	\$1,800,000	\$4,200,000	596	15	20	12
Division 7 (West Hollywood)	8800 Santa Monica Blvd., W. Hollywood	SCE	27,840	\$3,500,000	\$1,050,000	\$2,450,000	348	12	20	7
Division 9 (El Monte)	3449 Santa Anita Ave, El Monte	SCE	46,080	\$5,800,000	\$1,740,000	\$4,060,000	576	12	20	6
Division 10 (Gateway/Mission)	742 N. Mission Road, L.A.	LADWP	23,980	\$2,800,000	\$840,000	\$1,960,000	299	14	19	9
Division 11 (Blue Line Yard)	430 E. 208th Street, Long Beach	SCE	61,526	\$7,100,000	\$2,130,000	\$4,970,000	769	11	16	2
Division 20 (Red Line Yard)	320 S. Santa Fe Ave, L.A.	LADWP	75,510	\$8,800,000	\$2,640,000	\$6,160,000	944	14	19	10
Division 21 (Gold Line Yard)	1800 Baker Street, L.A.	LADWP	20,087	\$2,300,000	\$690,000	\$1,610,000	251	14	18	11
Division 22 (Green Line Yard)	14724 Aviation Blvd., Lawndale	SCE	27,698	\$3,200,000	\$960,000	\$2,240,000	346	11	16	4
Divisional Rebuild Center (Loc. 30)	900 S. Lyon St., L.A.	LADWP	119,130	\$14,000,000	\$4,200,000	\$9,800,000	1498	14	19	1
Operations Center (Loc. 60)	2000 Imperial Highway, Compton	SCE	38,250	\$4,400,000	\$1,320,000	\$3,080,000	478	11	16	3
TOTAL FOR HEADQUARTERS AND DIVISIONS			581,291	\$68,600,000	\$20,580,000	\$48,020,000				
Orange Line										
Arden Station Park N Ride	7225 Graham Avenue, L.A.	SCE	7,500	\$950,000	\$285,000	\$665,000	94	12	17	15
Arden Station Park N Ride	1920 1/2 Acacia Ave., Compton	SCE	82,743	\$10,500,000	\$3,150,000	\$7,350,000	1034	12	17	18
Arden Station Park N Ride	20220 Santa Fe Ave, L.A.	SCE	71,640	\$9,000,000	\$2,700,000	\$6,300,000	896	12	17	21
Arden Station Park N Ride	3420 N. Pacific Ave., Long Beach	LB Power	15,510	\$2,000,000	\$600,000	\$1,400,000	194	15	21	38
Arden Station Park N Ride	2750 W. American Ave., Long Beach	LB Power	43,800	\$5,500,000	\$1,650,000	\$3,850,000	548	15	20	29
Arden Station Parking Lots	5301 Marine Ave, Redondo Beach	SCE	79,800	\$10,000,000	\$3,000,000	\$7,000,000	998	12	17	17
Arden Station Park N Ride	22226 E. El Segundo Blvd., El Segundo	SCE	28,275	\$3,500,000	\$1,050,000	\$2,450,000	353	12	17	19
Arden Station Park N Ride	11500 Aviation Blvd, L.A.	SCE	86,700	\$11,000,000	\$3,300,000	\$7,700,000	1084	12	17	20
Arden Station Park N Ride	11230 S. Acacia, Inglewood	SCE	132,165	\$16,700,000	\$5,010,000	\$11,690,000	1652	12	17	22
Arden Station Park N Ride	11901 S. Crenshaw Blvd, Hawthorne	LADWP	85,140	\$10,700,000	\$3,210,000	\$7,490,000	1064	15	20	28
Arden Station Park N Ride	11603 S. Vermont Ave, L.A.	LADWP	38,430	\$4,800,000	\$1,440,000	\$3,360,000	480	15	20	33
Arden Station Park N Ride	1150 S. Figueroa St., L.A.	LADWP	70,620	\$8,900,000	\$2,670,000	\$6,230,000	883	15	20	30
Arden Station Park N Ride	11667 S. Avalon Blvd., L.A.	LADWP	44,010	\$5,500,000	\$1,650,000	\$3,850,000	550	15	20	34
Arden Station Park N Ride	11651 Wilmington Ave, L.A.	LADWP	21,816	\$2,700,000	\$810,000	\$1,890,000	273	15	20	36
Arden Station Park N Ride	11508 Long Beach Blvd, Lynwood	LADWP	129,991	\$16,400,000	\$4,920,000	\$11,480,000	1652	15	20	27
Arden Station Park N Ride	12801 Lakewood Avenue, Downey	LADWP	63,805	\$8,000,000	\$2,400,000	\$5,600,000	798	15	20	31
Arden Station Park N Ride	12901 Hoxie Ave, Norwalk	LADWP	411,479	\$52,000,000	\$15,600,000	\$36,400,000	5143	15	20	25
Gold Line										
Arden Station Park N Ride	370 West Avenue 26, L.A.	LADWP	31,680	\$4,000,000	\$1,200,000	\$2,800,000	396	15	20	35
Arden Station Park N Ride	3545 Pasadena Ave, L.A.	LADWP	30,240	\$3,800,000	\$1,140,000	\$2,660,000	378	15	20	37
Arden Station Park N Ride	149 Halstead Ave, Pasadena	SCE	40,474	\$5,100,000	\$1,530,000	\$3,570,000	506	12	20	16
Orange Line										
Arden Station Park N Ride	14620 Bessemer Street, Van Nuys	LADWP	119,385	\$15,100,000	\$4,530,000	\$10,570,000	1492	15	20	24
Arden Station Park N Ride	Canoga	LADWP	206,910	\$30,500,000	\$9,150,000	\$21,350,000	3022	15	20	23
Arden Station Park N Ride	8534 Topham Street, Reseda	LADWP	67,950	\$8,600,000	\$2,580,000	\$6,020,000	849	15	20	26
Arden Station Park N Ride	6355 Winnetka Ave, Woodland Hills	LADWP	36,765	\$4,600,000	\$1,380,000	\$3,220,000	460	15	20	32
Arden Buildings (Loc. 61)	284 S. Santa Fe Ave, L.A.	LADWP	45,678	\$5,300,000	\$1,590,000	\$3,710,000	571	14	19	14
TOTAL FOR RAIL FACILITIES AND PARKING LOTS			1,992,506	\$255,150,000	\$76,545,000	\$178,605,000				
GRAND TOTALS			2,573,797	\$323,750,000	\$97,125,000	\$226,625,000				

ATTACHMENT B
PERFORMANCE CONTACTING/RRC PRO FORMA

MTA ERC PROFORMA FINANCIALS

PV System Size (kWp)	1139
Estimated Cost of Solar PV	\$8,645,112
Estimated Cost of Recommended ECMs	\$3,977,411
Total Cost of Solar and Recommended ECMs:	\$12,622,523
Estimated Utility, State and Federal Incentives (3)	\$ (3,403,303)
CEIS Cost of Funds to Carry Incentive	\$0
Net PROJECT COST	\$9,219,221
Infrastructure Capital Contribution	\$2,000,000
Capitalized Interest during Construction	\$340,173
Net Financed Amount	\$7,559,393
Construction Term (mos)	12
Financing Term (years)	20
Finance Interest Rate	4.5%
Solar Module Degradation/Year Factor	0.50%

Year ⁽¹⁾	Solar Electricity Produced (kWh) ⁽²⁾	PV Bundled Utility Electricity Cost Offset (\$/kWh) ⁽²⁾	Total Solar PV Cost Savings(\$)	Total Savings from ECMs	Financing Cost	Net Benefit
	A	B	C = A * B	D	E	F = C + D + E
1	1,560,180	\$0.115	\$179,920	\$364,214	(\$485,034)	\$59,100
2	1,552,379	\$0.118	\$182,601	\$371,498	(\$494,999)	\$59,100
3	1,544,617	\$0.120	\$185,322	\$378,928	(\$505,149)	\$59,100
4	1,536,894	\$0.122	\$188,083	\$386,506	(\$515,489)	\$59,100
5	1,529,210	\$0.125	\$190,885	\$394,236	(\$526,022)	\$59,100
6	1,521,564	\$0.127	\$193,729	\$402,121	(\$536,751)	\$59,100
7	1,513,956	\$0.130	\$196,616	\$410,164	(\$547,680)	\$59,100
8	1,506,386	\$0.132	\$199,546	\$418,367	(\$558,813)	\$59,100
9	1,498,854	\$0.135	\$202,519	\$426,734	(\$570,133)	\$59,100
10	1,491,360	\$0.138	\$205,536	\$435,269	(\$581,705)	\$59,100
11	1,483,903	\$0.141	\$208,599	\$443,974	(\$593,473)	\$59,100
12	1,476,483	\$0.143	\$211,707	\$452,854	(\$605,461)	\$59,100
13	1,469,101	\$0.146	\$214,861	\$461,911	(\$617,672)	\$59,100
14	1,461,756	\$0.149	\$218,063	\$471,149	(\$630,112)	\$59,100
15	1,454,447	\$0.152	\$221,312	\$480,573	(\$642,784)	\$59,100
16	1,447,175	\$0.155	\$224,610	\$490,184	(\$655,693)	\$59,100
17	1,439,939	\$0.158	\$227,956	\$499,987	(\$668,843)	\$59,100
18	1,432,739	\$0.161	\$231,353	\$509,987	(\$682,240)	\$59,100
19	1,425,575	\$0.165	\$234,800	\$520,187	(\$695,887)	\$59,100
20	1,418,447	\$0.168	\$238,298	\$530,590	(\$709,789)	\$59,100
21	1,411,355	\$0.171	\$241,849	\$0	\$0	\$241,849
22	1,404,298	\$0.175	\$245,453	\$0	\$0	\$245,453
23	1,397,277	\$0.178	\$249,110	\$0	\$0	\$249,110
24	1,390,291	\$0.182	\$252,822	\$0	\$0	\$252,822
25	1,383,339	\$0.185	\$256,589	\$0	\$0	\$256,589
26	1,376,422	\$0.189	\$260,412	\$0	\$0	\$260,412
27	1,369,540	\$0.193	\$264,292	\$0	\$0	\$264,292
28	1,362,693	\$0.197	\$268,230	\$0	\$0	\$268,230
29	1,355,879	\$0.201	\$272,227	\$0	\$0	\$272,227
30	1,349,100	\$0.205	\$276,283	\$0	\$0	\$276,283
Total	43,565,158		\$6,743,581	\$8,848,432	(\$11,823,748)	\$3,769,265

Notes and Sources:

- (1) The estimated annual kWh produced by the Solar PV system
- (2) Assumed LAD/WP Bundled Electric cost per kWh, 2.0% Annual Escalation
- (3) Assumed 30-year design life of PV and 20-year Savings from ECMs
- (4) Assumes LAD/WP PV Robots up to 300kW and SGHP Robots of \$2.80/W (Wind Avg is \$3.28/W CEC AC). Additional ECM Incentives included