

PROFESSIONAL SERVICES AGREEMENT

TIG/m, LLC

On this ____ day of _____, 2020 ("Effective Date"), the CITY OF RIVERSIDE, a California charter city and municipal corporation ("City"), and TIG/m, LLC, a California limited liability company ("Contractor"), mutually agree as follows:

1. **Scope of Services.** Contractor shall furnish all labor, materials and equipment for and perform the work in conducting a streetcar feasibility study ("Services"). Contractor shall perform the Services in accordance with the provisions and requirements of the Scope of Services attached hereto as Exhibit "A" and incorporated herein by reference.

2. **Term.** This Agreement shall be in force from the Effective Date, and continue to June 30, 2021, unless otherwise terminated pursuant to the provisions herein. This Agreement may be extended upon mutual consent of the parties.

3. **Compensation.** Contractor contributing five percent (5%) towards the amount shown in Exhibit "B," attached hereto and incorporated herein by reference. City shall pay Contractor the remainder for the Services not to exceed Four Hundred Sixteen Thousand Four Hundred Ninety-Four Dollars and Twenty-Five Cents (\$416,494.25). City shall pay Contractor for the Services in accordance with the provisions of the Compensation Schedule.

4. **General Compliance with Laws.** Contractor shall keep fully informed of federal, state and local laws and ordinances and regulations which in any manner affect those employed by Contractor, or in any way affect the performance of Services by Contractor pursuant to this Agreement. Contractor shall at all times observe and comply with all such laws, ordinances and regulations, and shall be solely responsible for any failure to comply with all applicable laws, ordinances and regulations.

5. **Business Tax Certificate.** As a condition of this Agreement, Contractor shall secure a business tax certificate to operate in the City of Riverside pursuant to Chapter 5.04 of the Riverside Municipal Code, and shall also secure any other licenses or permits which may be required.

6. **Business Tax and Penalties.** Contractor acknowledges and agrees that with respect to any business tax or penalties thereon, utility charges, invoiced fee or other debt which is owed, or which becomes owed, by Contractor to City, City reserves the right to withhold and offset said amounts from any payments, refunds or reimbursements owed by City to Contractor under the Agreement. Notice of such withholding and offset shall promptly be given to Contractor by City in writing. In the event of a dispute as to the amount owed or whether such amount is owed to City, City will hold such disputed amount until either the appropriate appeal process has been completed or until the dispute has been resolved.



7. **Personnel.** Contractor shall furnish all personnel qualified necessary to perform the Services and shall be responsible for their performance and compensation. The key personnel are listed in Exhibit "C," attached hereto and incorporated herein by reference.

8. **Assignment and Subcontracting.** Neither party shall assign any right, interest, or obligation in or under this Agreement to any other entity without prior written consent of the other party. In any event, no assignment shall be made unless the assignee expressly assumes the obligations of assignor under this Agreement, in a writing satisfactory to the parties. Contractor acknowledges that any assignment may, at the City's sole discretion, require City Manager and/or City Council approval. Contractor shall not subcontract any portion of the work required by this Agreement without prior written approval by the responsible City Contract Administrator. Subcontracts, if any, shall contain a provision making them subject to all provisions stipulated in this Agreement, including without limitation, the insurance obligations set forth in Section 11. The Contractor acknowledges and agrees that the City is an intended beneficiary of any work performed by any subcontractor for purposes of establishing a duty of care between any subcontractor and the City.

9. **Independent Contractor.** In the performance of this Agreement, Contractor, and Contractor's employees, subcontractors and agents, shall act in an independent capacity as independent contractors, and not as officers or employees of the City of Riverside. Contractor acknowledges and agrees that the City has no obligation to pay or withhold state or federal taxes or to provide workers' compensation or unemployment insurance to Contractor, or to Contractor's employees, subcontractors and agents. Contractor, as an independent contractor, shall be responsible for any and all taxes that apply to Contractor as an employer.

10. **Indemnification.** Contractor shall indemnify and hold harmless the City, and the City's employees, officers, managers, agents and council members from any liability, claim, damage or action whatsoever, arising out of the sole negligence or willful misconduct of Contractor, its officers, employees, subcontractors, agents or including but not limited to property damage, bodily injury, or death. Contractor shall defend, at its sole cost and expense, including but not limited to attorney fees, cost of investigation, defense and settlement or awards, the City and the City's employees, officers, managers, agents and council members in any such action or claim. With respect to any action or claim subject to indemnification herein by Contractor, Contractor shall, at its sole cost, have the right to use counsel of its own choice and shall have the right to adjust, settle, or compromise any such action or claim without the prior consent of City; provided, however, that any such adjustment, settlement or compromise in no manner whatsoever limits or circumscribes Contractor's indemnification of City. Contractor's obligations hereunder shall be satisfied when Contractor has provided to City the appropriate form of dismissal (or similar document) relieving the City from any liability for the action or claim involved. The specified insurance limits required in this Agreement shall in no way limit or circumscribe Contractor's obligations to indemnify and hold harmless the City.

11. Insurance.

11.1 **General Provisions.** Prior to the City's execution of this Agreement, Contractor shall provide satisfactory evidence of, and shall thereafter maintain during the term of



this Agreement, such insurance policies and coverages in the types, limits, forms and ratings required herein. The rating and required insurance policies and coverages may be modified in writing by the City's Risk Manager or City Attorney, or a designee, unless such modification is prohibited by law.

11.1.1 Limitations. These minimum amounts of coverage shall not constitute any limitation or cap on Contractor's indemnification obligations under Section 10 hereof.

11.1.2 Ratings. Any insurance policy or coverage provided by Contractor or subcontractors as required by this Agreement shall be deemed inadequate and a material breach of this Agreement, unless such policy or coverage is issued by insurance companies authorized to transact insurance business in the State of California with a policy holder's rating of A or higher and a Financial Class of VII or higher.

11.1.3 Cancellation. The policies shall not be canceled unless thirty (30) days' prior written notification of intended cancellation has been given to City by certified or registered mail, postage prepaid.

11.1.4 Adequacy. The City, its officers, employees and agents make no representation that the types or limits of insurance specified to be carried by Contractor pursuant to this Agreement are adequate to protect Contractor. If Contractor believes that any required insurance coverage is inadequate, Contractor will obtain such additional insurance coverage as Contractor deems adequate, at Contractor's sole expense.

11.2 Workers' Compensation Insurance. By executing this Agreement, Contractor certifies that Contractor is aware of and will comply with Section 3700 of the Labor Code of the State of California requiring every employer to be insured against liability for workers' compensation, or to undertake self-insurance before commencing any of the work. Contractor shall carry the insurance or provide for self-insurance required by California law to protect said Contractor from claims under the Workers' Compensation Act. Prior to City's execution of this Agreement, Contractor shall file with City either 1) a certificate of insurance showing that such insurance is in effect, or that Contractor is self-insured for such coverage, or 2) a certified statement that Contractor has no employees, and acknowledging that if Contractor does employ any person, the necessary certificate of insurance will immediately be filed with City. Any certificate filed with City shall provide that City will be given ten (10) days' prior written notice before modification or cancellation thereof.

11.3 Commercial General Liability and Automobile Insurance. Prior to City's execution of this Agreement, Contractor shall obtain, and shall thereafter maintain during the term of this Agreement, commercial general liability insurance and automobile liability insurance as required to insure Contractor against damages for personal injury, including accidental death, as well as from claims for property damage, which may arise from or which may concern operations by anyone directly or indirectly employed by, connected with, or acting for or on behalf of Contractor. The City, and its officers, employees and agents, shall be named as additional insureds under the Contractor's insurance policies.



11.3.1 Contractor's commercial general liability insurance policy shall cover both bodily injury (including death) and property damage (including, but not limited to, premises operations liability, products-completed operations liability, independent contractor's liability, personal injury liability, and contractual liability) in an amount not less than \$1,000,000 per occurrence and a general aggregate limit in the amount of not less than \$2,000,000.

11.3.2 Contractor's automobile liability policy shall cover both bodily injury and property damage in an amount not less than \$1,000,000 per occurrence and an aggregate limit of not less than \$1,000,000. All of Contractor's automobile and/or commercial general liability insurance policies shall cover all vehicles used in connection with Contractor's performance of this Agreement, which vehicles shall include, but are not limited to, Contractor owned vehicles, Contractor leased vehicles, Contractor's employee vehicles, non-Contractor owned vehicles and hired vehicles.

11.3.3 Prior to City's execution of this Agreement, copies of insurance policies or original certificates along with additional insured endorsements acceptable to the City evidencing the coverage required by this Agreement, for both commercial general and automobile liability insurance, shall be filed with City and shall include the City and its officers, employees and agents, as additional insureds. Said policies shall be in the usual form of commercial general and automobile liability insurance policies, but shall include the following provisions:

It is agreed that the City of Riverside, and its officers, employees and agents, are added as additional insureds under this policy, solely for work done by and on behalf of the named insured for the City of Riverside.

11.3.4 The insurance policy or policies shall also comply with the following provisions:

a. If the policy is written on a claims made basis, the certificate should so specify and the policy must continue in force for one year after completion of the services. The retroactive date of coverage must also be listed.

b. The policy shall specify that the insurance provided by Contractor will be considered primary and not contributory to any other insurance available to the City and Endorsement No. CG 20010413 shall be provided to the City.

12. **Termination.** City shall have the right to terminate any or all of Contractor's Services and work covered by this Agreement at any time, without cause, upon thirty (30) calendar days' written notice to Contractor. In the event of such termination, Contractor shall submit Contractor's final written statement of the amount of services provided as of the date of such termination for payment by the City.

Notwithstanding the foregoing, the City may terminate Contractor's performance of this Agreement upon five (5) calendar days' written notice if:

- (1) Contractor fails to promptly begin performance of the Services;



- (2) Contractor fails to perform the Services;
- (3) Contractor discontinues performance of the Services;
- (4) Contractor fails to make payment to employees in accordance with applicable law;
- (5) Contractor disregards laws, ordinances, or rules, regulations, or orders of a public authority having jurisdiction;
- (6) Contractor otherwise is guilty of breach of a provision of this Agreement;
- (7) Contractor becomes insolvent, is adjudicated bankrupt, or makes a general assignment for the benefit of creditors and fails to provide City with adequate assurances of Contractor's ability to satisfy its contractual obligations.
- (8) A receiver, trustee, or other judicial officer shall not have any right, title, or interest in or to this Agreement. Upon that person's appointment, City has, at its option and sole discretion, the right to immediately cancel the Agreement and declare it null and void.

13. **Non-Discrimination.** During Contractor's performance of this Agreement, Contractor shall not discriminate on the grounds of race, religious creed, color, national origin, ancestry, age, physical disability, mental disability, medical condition including the medical condition of Acquired Immune Deficiency Syndrome (AIDS) or any condition related thereto, marital status, gender, gender identity, genetic information, gender expression, sex or sexual orientation, military and veteran status, in the selection and retention of employees and subcontractors and the procurement of materials and equipment, except as provided in Section 12940 of the California Government Code. Further, Contractor agrees to conform to the requirements of the Americans with Disabilities Act in the performance of this Agreement.

14. **Solicitation.** Contractor warrants that Contractor has not employed or retained any person or agency to solicit or secure this Agreement, nor has it entered into any agreement or understanding for a commission, percentage, brokerage, or contingent fee to be paid to secure this Agreement. For breach of this warranty, City shall have the right to terminate this Agreement without liability and pay Contractor only for the value of work Contractor has actually performed, or, in its sole discretion, to deduct from the Agreement price or otherwise recover from Contractor the full amount of such commission, percentage, brokerage or commission fee. The remedies specified in this section shall be in addition to and not in lieu of those remedies otherwise specified in this Agreement.

15. **Prevailing Wage.** If applicable, pursuant to Section 1771 of the California Labor Code, Contractors are required to pay the general prevailing rates of per diem wages, overtime and holiday wages as determined by the Director of the Department of Industrial Relations and



implemented by Resolution No. 13346 of the City Council of the City of Riverside. The Director's determination of prevailing wage rates is available on-line at www.dir.ca.gov/dlsr/DPreWageDetermination.htm, and is referred to and made a part hereof as though fully set forth herein. California Labor Code Sections 1725.5 and 1771.1 requiring all general contractors and subcontractors to be registered with DIR. Registration can be accomplished through the DIR website by using this link: <http://www.dir.ca.gov/Public-Works/PublicWorks.html>.

16. **Notices.** Service of any notices, bills, invoices or other documents required or permitted under this Agreement shall be sufficient if sent by one party to the other by United States mail, postage prepaid and addressed as follows:

To City

City Manager's Office
City of Riverside
Attn: Rafael Guzman
3900 Main Street
Riverside, CA 92522

To Contractor

TIG/m, LLC
Attn: Brad Read
9160 Jordan Avenue
Chatsworth, CA 91311

17. **Venue.** Any action at law or in equity brought by either of the parties hereto for the purpose of enforcing a right or rights provided for by this Agreement shall be tried in the Superior Court of California, County of Riverside and the parties hereby waive all provisions of law providing for a change of venue in such proceedings to any other county.

19. **Waiver.** No action or failure to act by the City shall constitute a waiver of any right or duty afforded City under this Agreement, nor shall any action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically provided in this Agreement or as may be agreed in writing.

19. **Severability.** Each provision, term, condition, covenant and/or restriction, in whole and in part, in this Agreement shall be considered severable. In the event any provision, term, condition, covenant and/or restriction, in whole and/or in part, in this Agreement is declared invalid, unconstitutional, or void for any reason, such provision or part thereof shall be severed from this Agreement and shall not affect any other provision, term, condition, covenant and/or restriction of this Agreement and the remainder of the Agreement shall continue in full force and effect.

20. **Amendments.** This Agreement may be modified or amended only by a written agreement and/or change order executed by the Contractor and City.

21. **Authority.** The individuals executing this Agreement and the instruments referenced herein on behalf of Contractor each represent and warrant that they have the legal power, right and actual authority to bind Contractor to the terms and conditions hereof and thereof.

22. **Entire Agreement.** This Agreement constitutes the final, complete, and exclusive statement of the terms of the agreement between the parties pertaining to the subject matter of this



Agreement, and supersedes all prior and contemporaneous understandings or agreements of the parties. Neither party has been induced to enter into this Agreement by, and neither party is relying on, any representation or warranty outside those expressly set forth in this Agreement.

23. **Conflict of Interest.** The parties acknowledge and agree that the product and services being rendered by Consultant are Consultant's product and as such pose a conflict of interest. The parties agree that the City will retain a third part consultant to provide a peer review of Consultant's assumptions and findings. Consultant will work with the City's peer consultant in connection with said assumptions and findings as directed by the City.

[SIGNATURES ON FOLLOWING PAGE.]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed the day and year first above written.

CITY OF RIVERSIDE, a California
charter city and municipal corporation

By: _____
City Manager

Attest: _____
City Clerk

Certified as to Availability of Funds

By: _____
CFO/Treasurer

Approved as to Form:

By: _____
Chief Assistant City Attorney

TIG/m, LLC,
a California limited liability company

By: _____
BRAD READ
[Printed Name]

PRESIDENT
[Title]

By: _____
ALVARO VILLA
[Printed Name]

CEO
[Title]



EXHIBIT "A"

SCOPE OF SERVICES





The Riverside Streetcar

Proposal for FEASIBILITY STUDY with Conceptual Design



Prepared for:
City of Riverside

Prepared by:
TIG/m, LLC
9160 Jordan Avenue
Chatsworth, CA 91311
+1 818-709-8500

Modern Street Railways
9160 JORDAN AVENUE
CHATSWORTH, CA USA 91311
Tel. 818 709 8500 Fax: 818 709 8500
tig-m.com

SECTIONS

Project Description .1

TIG/m Company Profile .2

Scope of the Proposal .3

Methodology .4

Deliverables .5

Commercial Proposal .6

Project Schedule .7

SECTION 1

Project Description

The subject of this Proposal is a street-running electric railway system (commonly known as a streetcar system) to be considered for the Downtown area of Riverside, CA.

The project has been dubbed the Riverside Streetcar system for the purposes of this conceptual effort. The scope of this Proposal is a Feasibility Study, which will require a certain level of Conceptual Design in order to quantify the project in units that can be used to provide insight into the technical and economic feasibility of the project.

TIG/m has begun a preliminary study of the transportation systems, both existing and proposed, for the greater Riverside area. This work will be continued under the proposed study, and it will be the goal of the design efforts undertaken to introduce the streetcar not as a replacement for any of the existing transit modes, but as a necessary "link in the chain" which would provide a multi-modal system encircling all of greater Riverside.

The number one goal of any public transportation system is to get people out of their private automobiles by giving them a complete end-to-end solution for their travels; creating a communal sense of place that is a connected, walkable, exciting place to be. This is done by connecting all of the alternate modes of travel into a seamless whole. In the case of the Riverside Streetcar this means making *as many tram stops as possible* a multi-modal stop for buses, streetcars, and bicycles. These three modes support one and other, when we give motorists a viable opportunity to leave their cars at home all three of these modes of travel will see increased ridership. These modes do not compete with one and other, they complement one and other.

TIG/m is a turn-key design/build company that will assess the feasibility of using our revolutionary self-powered streetcar systems for the purposes intended on the Riverside Streetcar. TIG/m systems require no wayside power infrastructure thereby dramatically reducing the visual, technical, and economic impacts to the community. TIG/m is also a full-service engineering firm with independent design groups work autonomously and have the capability of performing unbiased feasibility and demand analysis for alternative options.

The alignment under consideration for the Riverside Streetcar will include a one-way downtown loop. This will be connected to a one or two-way loop heading out east and circling through the UC Riverside Campus continuing down adjacent to the new CARB campus and back to Downtown.

An Operations and Maintenance Facility and an associated TIG/m Manufacturing Plant is being proposed for the Innovation District north of 3rd Street. This Facility would be essential for the efficient operation of the streetcar line and would become the center of manufacturing of TIG/m advanced Modern streetcars for applications all over Southern California and eventually throughout the United States. An existing right-of-way and unused track spur in this area would be used as a test track and proving ground for new designs and technologies as they are developed by our team of world-class engineers and inventors.



TOTAL ALIGNMENT LENGTH: Single Track (one-way loop) = 7.75 mi.
Double Track (two-way loop) = 15.5 mi.
Number of Passenger Stops = 18

Conceptual Alignment Design

Working in conjunction with City Planners and interested groups in a design charrette we will develop a phase-able alignment concept. TIG/m civil engineers will then bring the entire alignment up to the level of schematic design (geometrically able to support engineered track) in order to assess the buildability of the trackwork in the existing streets and to provide a basis for accurate estimation of construction costs using unit quantities. Close liaison with City Managers, Planners, and Engineers will be developed in order to inform this design process with all available current data relative to rights of way, traffic controls, as well as at-grade and sub-grade utilities. An active Cost Model will be applied, based on the assumptions developed in the design charrettes, concerning a potential duty-cycle which will take into account operation and maintenance costs for the first year of operation, costs for 5-year increments thereafter, and concluding in a 30-year life cycle.

Demand Analysis w/ Ridership Projections

A Demand Analysis utilizing a modified standard 4-step procedure will be undertaken to assess the potential ridership of such a system. Public data from previous studies (such as RTA busway studies) will be accessed wherever possible to correlate new data with data that has been previously produced.

REF: RMV-0-10-PPL-160

Cost Benefit Analysis

A Cost/Benefit Analysis will be undertaken to compare and contrast the proposed self-powered streetcar system with traditional overhead catenary system streetcar (OCS) as well as standard and rapid-bus systems (BRT), other transit modes, as well as the do-nothing alternative.

Community Benefits Analysis

An overview of general and specific benefits of street railway to the community will be undertaken; including, increased mobility for low-income work force, access to multi-modal transportation solutions currently considered untenable, increased opportunities for Transit Oriented Development. Among other things, data developed during the conceptual design and demand analysis/ridership projection will be used to calculate reductions in vehicle miles travelled and the resulting reductions in various forms of pollution to the benefit of the community.



SECTION 2

TIG/m, LLC Company Overview

TIG/m, LLC is a California limited liability company in operation, for the sole purpose of design/building custom self-powered street railway systems, since 2005.

TIG/m, LLC builds self-powered electric vehicle systems (trams, trolleys, people-movers) that require no overhead wire or continuous wayside power systems of any kind. Our vehicles can be configured with range-extending power generators which allow them to operate for up to 20 hrs. per day without stopping to recharge the battery systems. Heritage-style and Modern type vehicles are available. Our newest models, being manufactured for the countries of Qatar, Aruba, Mexico, and the United Arab Emirates, are zero-emission ultra-green streetcars that utilize hydrogen fuel-cells to charge the batteries while they are in passenger service. Our rail vehicles run on standard gauge track (1,435 mm) and they are custom-designed, and hand crafted to the highest standards of excellence while at the same time adhering to all international standards for LRT vehicles.

Because our vehicles are self-powered, construction of the track and infrastructure is substantially simplified and, by elimination of overhead wire systems, most projects will see a reduction in capital cost of infrastructure construction of up to 50%.

We offer full service in each of the following scopes of work:

- Demand Analysis (feasibility studies)
- Alignment design
- Civil and track engineering
- Operations and maintenance planning
- Maintenance facility design
- Streetcar design and fabrication
- Track and special-work construction
- Depot fit-out
- System commissioning
- Operations & Maintenance

TIG/m is a full service street railway designer, vehicle manufacturer, and infrastructure builder. Our offices and factory at 9160 Jordan Ave, Chatsworth, CA, USA include Departments of Civil, Track, Structural, and Electrical and Mechanical Engineering, as well as state-of-the-art Fabrication Departments for the following disciplines:

- metalworking (machining, forming, welding)
- plastics (machining, forming, joining)
- composites (engineering, forming, lay-up)
- electronics (engineering, fabrication)
- hydraulics and pneumatics
- woodworking
- assembly
- finishing (painting, glazing)

A separate facility in Valle Crucis, North Carolina, USA provides the following discipline:

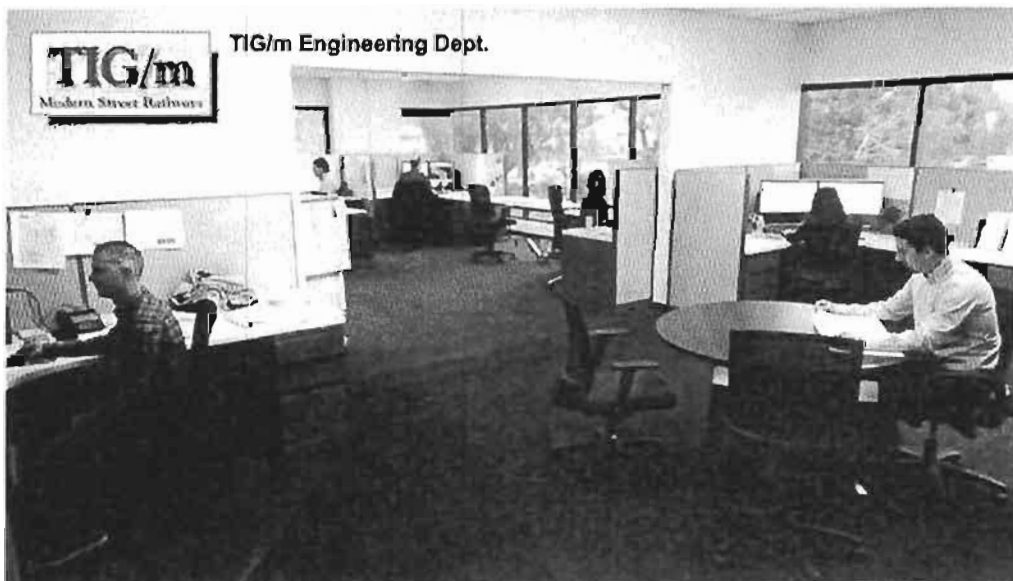
- Ferrous and non-ferrous metal working, forming, and casting foundry.



TIG/m provides on-site services that include:

- Construction Administration.
- QCR (Quality Control Review).
- Construction and installation of track, special-work, signalization equipment, maintenance facility infrastructure, and operations equipment.
- Delivery, test and adjust, and Commissioning of rolling-stock.
- Operations & Maintenance.

Please refer to the following pages for TIG/m, LLC Organizational Chart, Referenced GCC Project, and other documents concerning the Company Insurance and Registration.

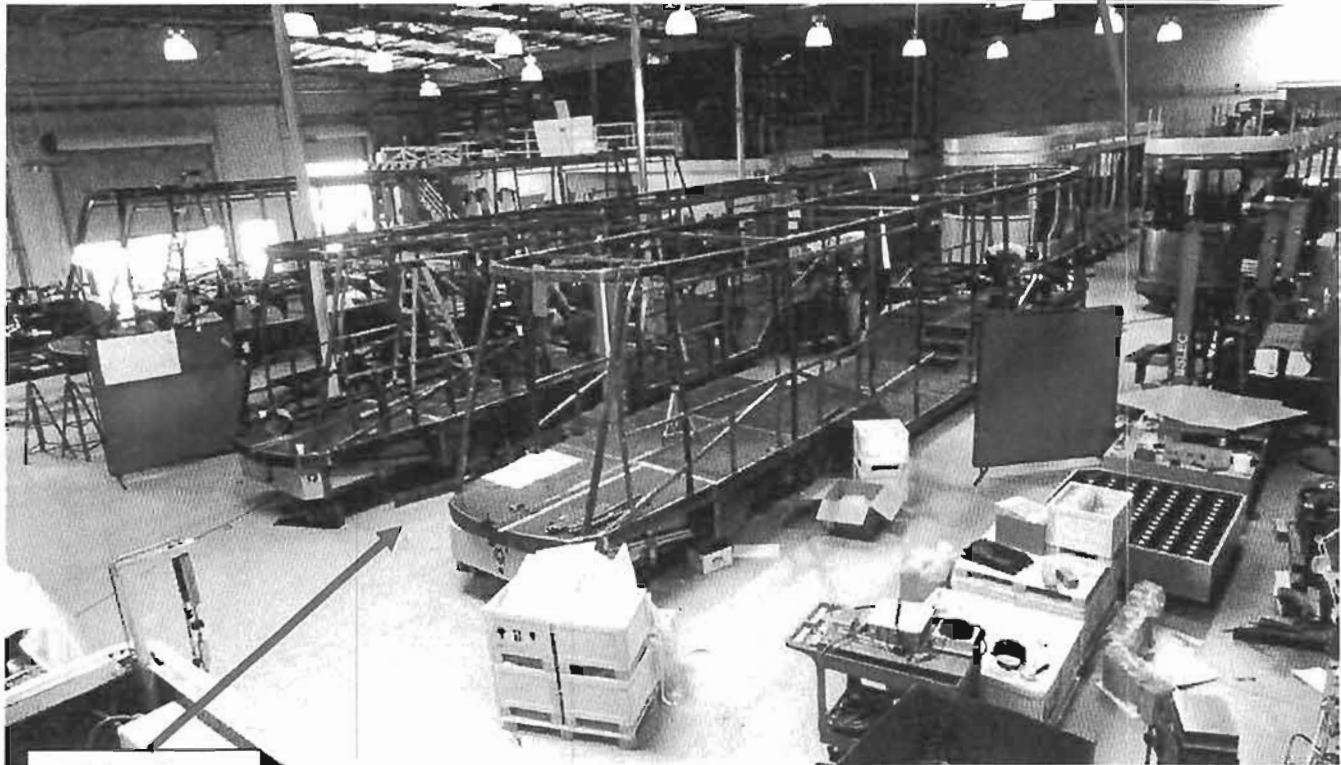


REF: RMV-0-10-PPL-160



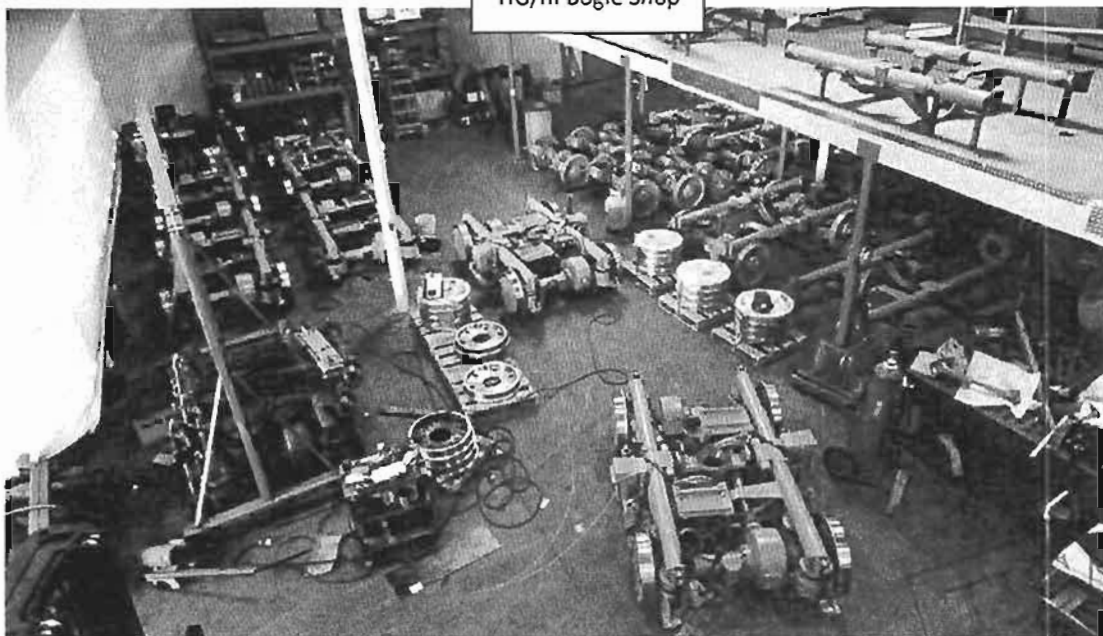
TIG/m Assembly Hall #2, July 11, 2018

Heritage Trolleys



Modern Trams

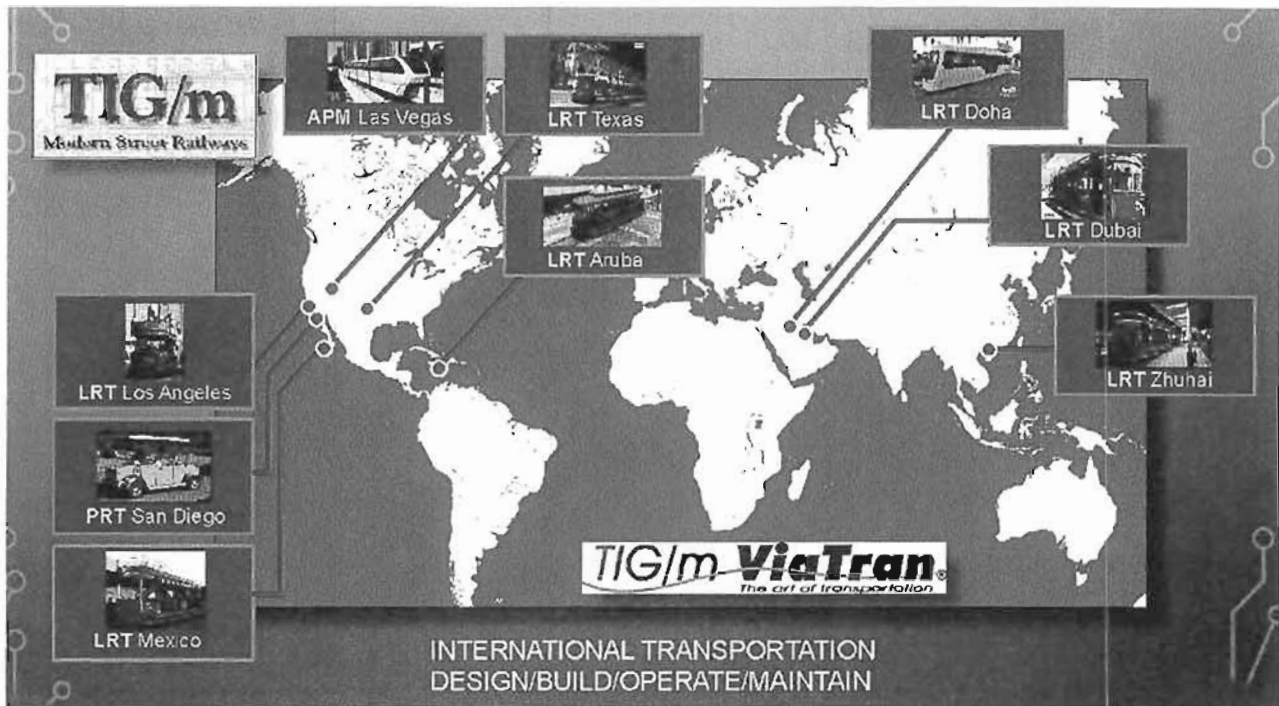
TIG/m Bogie Shop



REF: RMV-0-10-PPL-160

Modern Street
Railroad
1000 JOURNAL AVENUE
CHATHAM, CA 94511
Tel: 916 705 8500 Fax: 916 705 8500
tig m.com

TIG/m International Presence



TIG/m Tram System in Doha, Qatar



REF RMV-0-10-PPL-160



SECTION 3

Scope of the Proposal

The Scope of this Proposal is limited to developing sufficient information, both by on-site reconnaissance and in-house engineering, to allow the advancement of the proposed Riverside Streetcar design to a state that will provide a model capable of supporting the derivation of data necessary for the determination of the technical and economic feasibility of the program.

The information developed will include:

- Schematic level alignment design
- Demand Analysis with ridership forecast
- Infrastructure construction and rolling stock manufacturing estimates
- Cost Model with Operations and Maintenance estimates
- Total Project Cost Projections with Revenue Generation offsets
- Cost/Benefit Analysis including compare/contrast with OCS streetcar and BRT.
- Community Benefit Analysis.

The program to complete this work will cover a period of 16 weeks beginning at the time of execution of an agreement.



SECTION 4

Methodology

Alignment Design

At a design charrette, several alternate alignment concepts for the proposed Streetcar line will be investigated, along with the possibility of phasing the project by the sequential construction of portions of the alignment, the first of which could be functional transportation demonstrator.

The next steps to be taken involve site work and developing communications channels between TIG/m personnel, the RTA, and city officials. TIG/m civil design personnel will arrive to map and photograph the entire proposed alignment, taking notes as to the placement of all relevant street and wayside structures, furnishings, signalization equipment, and apparent utilities structures for future reference. Other TIG/m personnel will be tasked with developing relationships with City Planning, City Architects, and Building and Safety in order to acquire 3D surface models and/or contour maps of the roadway and drainage designs, as-built information on roadway structures, and subgrade utilities plans.

This information will be taken back to the TIG/m Offices in Chatsworth, CA to begin the process of developing a schematic level alignment design using AutoDesk Civil 3D.

Demand Analysis

Concurrent with the alignment design, other TIG/m personnel will begin the process of developing a Demand Analysis. The first step in the proposed methodology will be to undertake a thorough study of current population movements in three dimensions. Several alternate alignment concepts for the proposed Streetcar line will be investigated by a combination of on-site reconnaissance and study of current as-built infrastructure plans.

Toward our goal of identifying the optimal configuration of the Streetcar System for the Riverside Streetcar we will perform a Ridership Analysis. To do this we will develop a database for the greater Riverside area based on land-use mapping as well as building data and footfall mapping to develop accurate populations.

As we have done with the Ridership Analysis' for several previous projects including the Mshiereb Downtown Doha Tramway, our aim is to develop a picture of the *local micro-travel market* within the greater Riverside area and then identify which of the alternate alignment designs for the Streetcar will most efficiently serve that travel market. Utilizing all available city master plans coupled with land use diagrams and spreadsheets identifying the demographic distribution of the current and projected populations, we will collate and then subject this data to a simplified four-step method with the ultimate goal of forecasting a maximum demand on the Streetcar circulator, projected forward to the future build-out of the ambient transit systems planned for the greater Riverside area. The identified area is divided into individual Travel Analysis Zones (TAZ) for the purpose of the study, and the travel market is subjected to a four-step travel forecasting procedure which includes:

- Trip generation
- Trip distribution
- Mode split
- Trip assignment

The work defined above will result in a projected daily passenger demand on a proposed people mover operating on the preferred alignment.

REF: RMV-0-10-PPL-160

Cost/Benefit Analysis

The next step in the proposed methodology will be to investigate the application of the TIG/m MRV 3A streetcar technology as it applies to the proposed alignment. Alternate technologies and associated projected capital cost estimates will be compared and contrasted. The resulting data will be set forth in spreadsheet format.

Community Benefit Analysis

As a direct result of the Demand Analysis/Ridership Projection effort, a study of the various benefits to the community will be undertaken. Some of these will be less readily quantifiable such as; enhanced sense of place, increased sense of pride in community and prosperity consciousness. Some of these will be more readily quantifiable such as: increased accessibility to non-automobile drivers, better public transit accessibility for all due to shorter headways and increased hours of service. Some of these benefits will be firmly quantifiable by calculation such as: reduction in vehicle miles travelled (VMT), reduction in greenhouse gas production, reduction in vehicle tailpipe pollution, reduction in vehicle non-tailpipe pollution.

Cost Projections and Project Financing

Based on the preliminary designs developed for the study and the result of the Demand analysis, a Capital Cost Estimate and an Operations and Maintenance Cost Model will be developed. The Capital Cost Estimate will consist of ROM estimates of each scope of work required to complete the infrastructure and rolling stock components of the project. The O&M Cost Model will take into account all aspects of the ongoing system functionality for the life of the project (normally projected for 30 years).


Combined CAPEX and OPEX will be amortized over the project lifecycle and a methodology for financing the project will be set forth.

SECTION 5

Deliverables

The Deliverables for this project will consist of:

- Full-size site plans and alignment drawing showing the developed alignment and proposed locations for the passenger stops and O&M infrastructure.
- A PowerPoint presentation of the project, highlighting; the Team, the process (through video and still images), and the results of the study. This PPT will be suitable for presentation to all stakeholders.
- Bound copies of the printed Feasibility Study Report in as many copies as are required for presentation to Stakeholders and interested parties.
- The Report Contents will be set forth as follows:



TIGm, LLC
2700 Jordan Ave
Chatsworth, CA 91311
Tel: 818 709 8500 • Fax: 818 709 8500
www.modernstreetcarways.com

RIVERSIDE STREETCAR FEASIBILITY STUDY

Table of Contents

EXECUTIVE SUMMARY
1.0 INTRODUCTION
2.0 EXISTING CONDITIONS
3.0 SYSTEMS REQUIREMENTS
4.0 STREETCAR VEHICLES
5.0 OPERATIONS PLAN
6.0 ALIGNMENT CONCEPTS AND EVALUATION
7.0 RIDERSHIP ESTIMATE
8.0 COMMUNITY BENEFITS
9.0 CAPITAL COST ESTIMATE
10.0 OPERATIONS COST ESTIMATE
11.0 NEXT STEPS
APPENDICES
LIST OF TABLES
LIST OF FIGURES

REF: RMV-0-10-PPL-160

SECTION 6

Commercial Proposal

The proposed program of work will be completed during a period of 16 weeks following the execution of a suitable written agreement.

The compensation to TIG/m for the proposed program of work will cover the following range of engineering disciplines and design functions:

- Project Administration
- Public and Private Sector liaison
- Travel and Site-Work
- Alignment Design
- Civil Design
- Civil Engineering
- Track Engineering
- Demand Analysis
- O&M Planning and Design
- Financial Analysis
- Presentation Preparation
- Printing and Publication

The total compensation amount will be paid in three installments according to the following program of payments:

- 50% upon execution of the agreement
- 30% at the 8th week after execution of the agreement
- 20% at the delivery of the completed study

The compensation amount for the complete program of work set forth in this proposal is detailed in the attached Excel spreadsheet.



Project Costs

Project: FEASIBILITY STUDY w/Conceptual Design for Riverside Streetcar
Project ID No.: TIGMRMV-0-01-PPL-160_2020-03-10

v1.1

Project Management

Tasks	Resource Nos.	Resource	Dedicated Time		Days In Field	Daily In-house Rates (USD)	Daily Field Rates (USD)	Travel (USD) expenses	Per Diem (USD) \$100/Day	Hotel (USD) \$200	Totals USD
			Month/s	Days							
Director/Lead Design	1	Brad Reed*	Full Time - (4 Months)	84	20	\$ 1,200.00	\$ 1,600.00		\$ 2,000.00	\$ 4,000.00	\$ 114,800.00
Project Coordination	1	Polly Chellow**	Full Time - (4 Months)	84	15	\$ 675.00	\$ 780.00		\$ 1,500.00	\$ 3,000.00	\$ 62,775.00
Technical Writing	1	Julia Wahnsiedler**	Full Time (4 months)	84	10	\$ 650.00	\$ 750.00		\$ 1,000.00	\$ 2,000.00	\$ 58,600.00
										Sub-Total	\$ 236,175.00

Project Team

Tasks	Resource Nos.	Resource	Dedicated Time		Days In Field	Daily In-house Rates (USD)	Daily Field Rates (USD)	Travel (USD) Airfare	Per Diem (USD)	Hotel (USD) \$200	Totals USD
			Month/s	Days							
Demand Study/Data Gathering	1	Martin Villa	1 week	7	6	\$320.00	\$480.00	N/A	\$600.00	\$1,000.00	\$4,800.00
Demand Study/Data Gathering	1	Mauricio Lopez	1 week	7	6	\$320.00	\$480.00	N/A	\$600.00	\$1,000.00	\$4,800.00
Demand Study/Data Gathering	1	Katherine Villanueva	1 week	7	6	\$320.00	\$480.00	N/A	\$600.00	\$1,000.00	\$4,800.00
Demand Study/Data Gathering	1	Juan Diego Mejia	1 week	7	6	\$320.00	\$480.00	N/A	\$600.00	\$1,000.00	\$4,800.00
Civil Analysis/Engineering	1	Dalia Cordoba**	Part Time (3-4 months)	76	10	\$ 640.00	\$ 720.00	N/A	\$ 1,000.00	\$ 2,000.00	\$ 52,440.00
2 and 3D Modeling	2	Mauricio Lopez	Part Time - (2-3 Months)	60	N/A	\$ 640.00	N/A	N/A	N/A	N/A	\$ 38,400.00
Mechanical Engineering	1	Thomas Martinez	Part Time - (1-2 Months)	25	N/A	\$ 640.00	N/A	N/A	N/A	N/A	\$ 16,000.00
Drafting/Depot Design	2	Brent Lottman	Part Time - (1-2 Months)	30	N/A	\$ 640.00	N/A	N/A	N/A	N/A	\$ 19,200.00
Consulting/Feasibility	1	Alvaro Villa*	Part Time - (1-2 Months)	25	N/A	\$ 1,200.00	N/A	N/A	N/A	N/A	\$ 30,000.00
Cost/Benefit Analysis	2	David Hall*/Bruce Loeff	Part Time - (2-3 Months)	40	N/A	\$ 675.00	N/A	N/A	N/A	N/A	\$ 27,000.00
										Sub-Total	\$202,240.00

*Interface and Liaise w/ CP&A, RTA, RPU, City Planning

**Interface w/ City Planning

Grand Total \$ 438,415.00

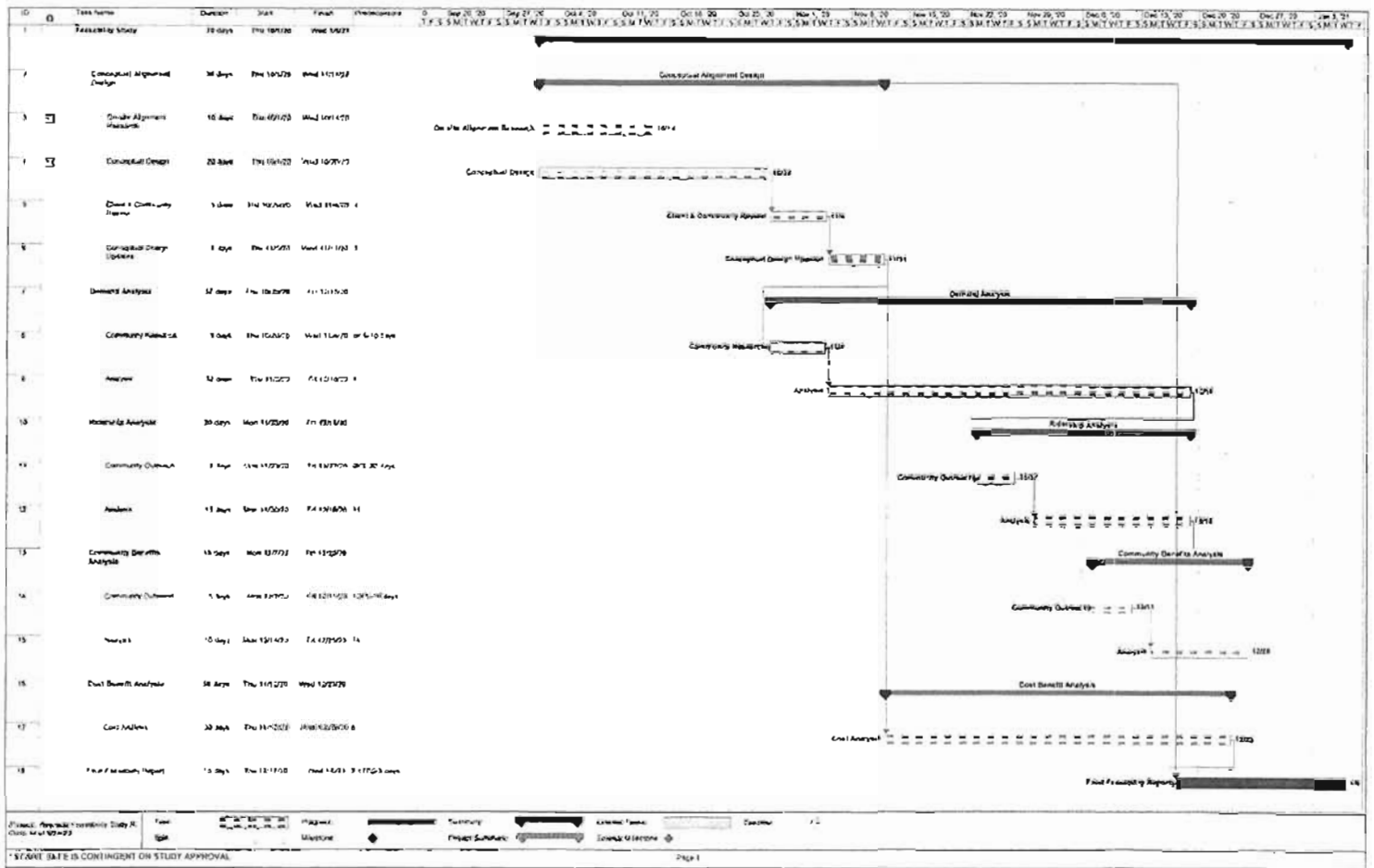
TIG/m, LLC 9160 Jordan Ave., Chatsworth, CA 91311



SECTION 7

Project Schedule

The following schedule completion date will be contingent upon the actual project start date.



Conclusion

It is our greatest hope that you will find the foregoing Proposal to be acceptable, and that you feel the same excitement and challenge that we feel when anticipating the start of such an ambitious undertaking.

Best regards,



Bradley L. Read
PRESIDENT
TIG/m, LLC





EXHIBIT "B"
COMPENSATION

The total compensation amount will be paid in three installments according to the following program of payments:

- 50% upon execution of the agreement
- 30% at the 8th week after execution of the agreement
- 20% at the delivery of the completed study





Project Costs

Project: FEASIBILITY STUDY w/Conceptual Design for Riverside Streetcar
Project ID No.: TIGMRMV-0-01-PPL-160_2020-03-10

v1.1

Project Management

Tasks	Resource Nos.	Resource	Dedicated Time		Days in Field	Daily In-house Rates (USD)	Daily Field Rates (USD)	Travel (USD) expenses	Per Diem (USD) \$100/Day	Hotel (USD) \$200	Totals USD
			Month/s	Days							
Director/Lead Design	1	Brind Reid*	Full Time - (4 Months)	84	20	\$ 1,200.00	\$ 1,600.00		\$ 2,000.00	\$ 4,000.00	\$ 114,800.00
Project Coordination	1	Polly Chaitow**	Full Time - (4 Months)	84	15	\$ 675.00	\$ 780.00		\$ 1,500.00	\$ 3,000.00	\$ 62,775.00
Technical Writing	1	Julia Wahnsiedler**	Full Time (4 months)	84	10	\$ 650.00	\$ 750.00		\$ 1,000.00	\$ 2,000.00	\$ 58,600.00
										Sub-Total	\$ 234,175.00

Project Team

Tasks	Resource Nos.	Resource	Dedicated Time		Days in Field	Daily In-house Rates (USD)	Daily Field Rates (USD)	Travel (USD) Airfare	Per Diem (USD) \$100	Hotel (USD) \$200	Totals USD
			Month/s	Days							
Demand Study/Data Gathering	1	Martin Villa	1 week	7	6	\$320.00	\$480.00	N/A	\$600.00	\$1,000.00	\$4,800.00
Demand Study/Data Gathering	1	Mauricio Lopez	1 week	7	6	\$320.00	\$480.00	N/A	\$600.00	\$1,000.00	\$4,800.00
Demand Study/Data Gathering	1	Katherine Villanueva	1 week	7	6	\$320.00	\$480.00	N/A	\$600.00	\$1,000.00	\$4,800.00
Demand Study/Data Gathering	1	Juan Diego Mejia	1 week	7	6	\$320.00	\$480.00	N/A	\$600.00	\$1,000.00	\$4,800.00
Civil Analysis/Engineering	1	Dalia Cordoba**	Part Time (3-4 months)	76	10	\$ 640.00	\$ 720.00	N/A	\$ 1,000.00	\$ 2,000.00	\$ 52,440.00
2 and 3D Modeling	2	Mauricio Lopez	Part Time - (2-3 Months)	60	N/A	\$ 640.00	N/A	N/A	N/A	N/A	\$ 38,400.00
Mechanical Engineering	1	Thomas Martinez	Part Time - (1-2 Months)	25	N/A	\$ 640.00	N/A	N/A	N/A	N/A	\$ 16,000.00
Drafting/Depot Design	2	Brent Leitman	Part Time - (1-2 Months)	30	N/A	\$ 640.00	N/A	N/A	N/A	N/A	\$ 19,200.00
Consulting/Feasibility	1	Alvaro Villa*	Part Time - (5-6 Months)	75	N/A	\$ 1,200.00	N/A	N/A	N/A	N/A	\$ 30,000.00
Cost/Benefit Analysis	2	David Hall*/Bruce Liscell	Part Time - (2-3 Months)	40	N/A	\$ 675.00	N/A	N/A	N/A	N/A	\$ 27,000.00
										Sub-Total	\$ 202,240.00

*Interface and Liaise w/ CPEA, RTA, RPU, City Planning

**Interface w/ City Planning

Grand Total \$ 436,415.00

TIG/m, LLC 9160 Jordan Ave., Chatsworth, CA 91311



EXHIBIT "C"
KEY PERSONNEL

Brad Read, President

