CITY OF SOUTH PASADENA
CITY COUNCIL REGULAR MEETING AGENDA

Council Chamber
1424 Mission Street, South Pasadena, CA 91030

December 18, 2019, at 7:30 p.m.

In order to address the City Council, please complete a Public Comment Card.
Time allotted per speaker is three minutes.
No agenda item may be taken after 11:00 p.m.

South Pasadena City Council Statement of Civility
As your elected governing board we will treat each other, members of the public, and city employees with patience, civility and courtesy as a model of the same behavior we wish to reflect in South Pasadena for the conduct of all city business and community participation. The decisions made tonight will be for the benefit of the South Pasadena community and not for personal gain.

CALL TO ORDER: Mayor Robert S. Joe.

ROLL CALL: Councilmembers Michael A. Cacciotti, Marina Khubesrian, M.D, and Richard D. Schneider, M.D.; Mayor Pro Tem Diana Mahmud; and Mayor Robert S. Joe.

PLEDGE OF ALLEGIANCE: Taylor Holmes and Tessa Holmes

PRESENTATIONS

1. **Reading of Ode to South Pasadena - Taylor Holmes and Tessa Holmes**
2. **Invocation - Sam Kil Joon Park, Police Chaplain**
3. **Administration of Oath of Office to Mayor Robert S. Joe by Los Angeles County Supervisor Kathryn Barger**
4. **Comments by Incoming Mayor**

COMMISSION APPOINTMENTS

5. Authorize Commission Appointments and Re-appointments

Recommendation

It is recommended that the City Council:

1.Appoint the following residents to three-year terms ending December 31, 2022:

- Marcos Holguin, Animal Commission
- Rebecca Thompson, Cultural Heritage Commission
- Annie Chang, Library Board of Trustees
- Victoria Rocha, Parks and Recreation Commission
- Albert Ocon, Parks and Recreation Commission
- Lisa Padilla, Planning Commission
- Shireen Chang, Senior Citizen Commission

2.Re-appoint the following residents to three-year terms ending December 31, 2022:

- William Cross, Cultural Heritage Commission
- Edwin Choi, Finance Commission
- Amy Davis Jones, Natural Resources and Environmental Commission
- Lauren Myles, Natural Resources and Environmental Commission
- Jeremy Ding, Public Safety Commission

3.Appointment the following to an unexpired term ending December 2021:

- Laura Dahl to the Planning Commission
- Ed Donnelly to the Public Safety Commission

PUBLIC COMMENTS AND SUGGESTIONS

(Time limit is three minutes per person)

The City Council welcomes public input. Members of the public may address the City Council by completing a public comment card and giving it to the Chief City Clerk prior to the meeting. At this time, the public may address the City Council on items that are not on the agenda. Pursuant to state law, the City Council may not discuss or take action on issues not on the meeting agenda, except that members of the City Council or staff may briefly respond to statements made or questions posed by persons exercising public testimony rights (Government Code Section 54954.2). Staff may be asked to follow up on such items.

COMMUNICATIONS

6. Councilmembers Communications

Time allotted per Councilmember is three minutes. Additional time will be allotted at the end of the City Council Meeting agenda, if necessary.

7. City Manager Communications

8. Reordering of and Additions to the Agenda

OPPORTUNITY TO COMMENT ON CONSENT CALENDAR

In order to address the City Council, please complete a Public Comment card. Time allotted per speaker is three minutes. Items listed under the consent calendar are considered by the City Manager to be routine in nature and will be enacted by one motion unless an audience member or Councilmember requests otherwise, in which case the item will be removed for separate consideration. Any motion relating to an ordinance or a resolution shall also waive the reading of the ordinance or resolution and include its introduction or adoption as appropriate.

CONSENT CALENDAR

9. Approval of Prepaid Warrants in the Amount of $213,512.45 less $250.00 in Voids, General City Warrants in the Amount of $530,409.10.

Recommendation
It is recommended that the City Council approve the Warrants as presented

10. Second Reading and Adoption of an Ordinance to Amend Chapter 31 of the South Pasadena Municipal Code to Correct Inconsistent Definitions of a Parkway

Recommendation Action
It is recommended that the City Council read by title only for second reading, waiving further reading, and adopt an Ordinance to amend Chapter 31 of the South Pasadena Municipal Code (SPMC) to correct inconsistent definitions of a parkway.

11. Approval of Purchase Order with Camino Real Chevrolet for a not-to-exceed amount of $64,000 for the Purchase of Two 2019 Chevrolet Bolt with a Grant under Local Government Partnership Program from South Coast Air Quality Management District

Recommendation
It is recommended that the City Council:

1. Accept a pricing quotation dated October 28, 2019 from Camino Real Chevrolet for the purchase of Two 2019 Chevrolet Bolt; and
2. Authorize the City Manager to execute the agreements and any amendments with Camino Real Chevrolet for a not-to-exceed amount of $64,000 ($62,208.20 for the bid amount and $1,781.80 for contingency);
3. Authorize the fund transfer of $32,000 from Water Enterprise Fund Reserve to Water Capital Outlay - Automotive (500-6010-6711-8540) and $32,000 from Sewer Enterprise Fund Reserve to Sewer Capital Outlay - Automotive (210-6010-6501-8540); and
4. Reject all other bids received.

12. Authorize the City Manager to Accept a Grant Agreement from the Los Angeles County Metropolitan Transportation Authority in the Amount of $420,000 to Plan and Host the 626 Golden Streets Arroyo Fest 2.0

Recommendation
It is recommended that the City Council authorize the City Manager to accept a grant award from the Los Angeles County Metropolitan Transportation Authority (Metro) in the amount of $420,000 to plan and host the 626 Golden Streets Arroyo Fest 2.0 (Arroyo Fest 2.0), scheduled for November 15, 2020.

PUBLIC HEARING ITEMS

13. Adoption of Urgency and Regular Ordinances by reference of the 2020 Los Angeles County Building, Residential, Electrical, Mechanical, Plumbing and Existing Building Codes with certain amendments, additions and deletions thereto amending Chapter 9 Article 1 of the South Pasadena Municipal Code

Recommendation
It is recommended that the Council:

1. Introduce for first reading by title only and waive further reading of an ordinance adopting by reference and amending the 2020 Los Angeles County Building, Electrical, Plumbing, Mechanical, Residential and Existing Building Codes; and
2. Schedule a public hearing on January 15, 2020 to consider adoption and second reading of the same ordinance.
3. Read by title only and waive further reading of an urgency ordinance adopting by reference and amending the 2020 Los Angeles County Building, Electrical, Plumbing, Mechanical, Residential and Existing Building Codes.

14. Adoption of an Urgency Ordinance Amending Section 36.350.200 (Residential Uses—Accessory Dwelling Units) of Division 36.350 (Standards for Specific Land Uses) of Article 3 (Site Planning and General Development Standards) of Chapter 36 (Zoning) of the South Pasadena Municipal Code Regarding Accessory Dwelling Units

Recommendation
It is recommended that the City Council adopt Urgency Ordinance No. ____ amending South Pasadena Municipal Code (SPMC) Section 36.350.200 (Residential Uses—Accessory Dwelling Units) in compliance with Assembly Bill No. 68 (AB 68, Ting), Assembly Bill No. 881 (AB 881, Bloom), and Senate Bill No. 13 (SB 13, Wieckowski).

ACTION/DISCUSSION

15. Award of Contract for the Preparation of Integrated Water and Wastewater Resources Management Plan to Carollo Engineers, Inc. for a Total Not-to-Exceed Amount of $579,395 for a Period of Two Years

Recommendation
It is recommended that the City Council:

1. Accept a proposal dated September 30, 2019 from Carollo Engineers, Inc. (Carollo) for the preparation of Integrated Water and Wastewater Resources Management Plan; and
2. Authorize the City Manager to execute the agreements and any amendments with Carollo for a not-to-exceed amount of $579,395 ($526,723 for the proposal amount and $52,672 for 10% contingency); and
3. Reject all other proposals received.

16. Consider Alternatives to Either Merge the Public Works Commission and the Freeway and Transportation Commission or to Continue Both as Permanent Bodies; and Approve the First Reading of an Ordinance to Implement the Chosen Course of Action

Recommendation Action
It is recommended that the City Council:

1) Consider the following alternatives for the Public Works Commission (PWC) and Freeway and Transportation Commission (FTC);
    a. Merge the two commissions to create a Mobility and Infrastructure Commission (MIC); or
    b. Establish the PWC as a permanent commission and direct staff to continue to work with the PWC and FTC Ad Hoc Committee to develop clarified roles and responsibilities of the two commissions and return to City Council with a recommendation; and
2) Read by title only for first reading, waiving further reading, of one of the following two ordinances:
    a. Introduce an Ordinance to repeal Article IVD (Freeway and Transportation Commission) of Chapter 2 "Administration" of the South Pasadena Municipal Code (SPMC), repeal Article IVK (Public Works Commission) of SPMC Chapter 2, and add a new Article IVK (Mobility and Infrastructure Commission) to SPMC Chapter 2 to create the Mobility and Infrastructure Commission (MIC); or
    b. Introduce an Ordinance amending Article IVK (Public Works Commission) of SPMC Chapter 2 to repeal Section 2.79-6 Sunset to establish the PWC as a permanent commission.

REPORTS

17. Air Quality Management District Presentation – Councilmember Michael A. Cacciotti

ADJOURNMENT

FUTURE CITY COUNCIL MEETINGS
(OPEN SESSION)

January 1, 2020	Regular City Council Meeting	Cancelled	7:30 p.m.
January 15, 2020	Regular City Council Meeting	Council Chamber	7:30 p.m.
February 5, 2019	Regular City Council Meeting	Council Chamber	7:30 p.m.
February 19, 2019	Regular City Council Meeting	Council Chamber	7:30 p.m.

PUBLIC ACCESS TO AGENDA DOCUMENTS AND BROADCASTING OF MEETINGS

Prior to meetings, City Council Meeting agenda packets are available at the following locations:

- City Clerk's Division, City Hall, 1414 Mission Street, South Pasadena, CA 91030;
- City website: www.southpasadenaca.gov/agendas

Agenda related documents provided to the City Council are available for public inspection in the City Clerk's Division, and on the City's website at www.southpasadenaca.gov/agendas. During the meeting, these documents will be available for inspection as part of the "Reference Binder" kept in the rear of the City Council Chamber.

Regular meetings are broadcast live on Spectrum Channel 19 and AT&T Channel 99. Meetings are also streamed live via the internet at www.southpasadenaca.gov/agendas.

AGENDA NOTIFICATION SUBSCRIPTION

Individuals can be placed on an email notification list to receive forthcoming agendas by calling the City Clerk's Division at (626) 403-7230.

ACCOMMODATIONS

The City of South Pasadena wishes to make all of its public meetings accessible to the public. Meeting facilities are accessible to persons with disabilities. If special assistance is needed to participate in this meeting, please contact the City Clerk's Division at (626) 403-7230. Upon request, this agenda will be made available in appropriate alternative formats to persons with disabilities. Hearing assistive devices are available in the Council Chamber. Notification at least 48 hours prior to the meeting will assist staff in assuring that reasonable arrangements can be made to provide accessibility to the meeting (28 CFR 35.102-35.104 ADA Title II).

I declare under penalty of perjury that I posted this notice of agenda on the bulletin board in the courtyard of City Hall at 1414 Mission Street, South Pasadena, CA 91030, and on the City's website as required by law.

12/12/19	/s/
Date	Kenia Lopez Deputy City Clerk

City Council Agenda Report

ITEM NO. 13

DATE: December 18, 2019

FROM: Stephanie DeWolfe, City Manager

PREPARED BY: Joanna Hankamer, Director of Planning and Community Development
Ayla Jefferson, Building Official

SUBJECT: **Adoption of Urgency and Regular Ordinances by reference of the 2020 Los Angeles County Building, Residential, Electrical, Mechanical, Plumbing and Existing Building Codes with certain amendments, additions and deletions thereto amending Chapter 9 Article 1 of the South Pasadena Municipal Code**

Recommendation Action
It is recommended that the Council:

1. Introduce for first reading by title only and waive further reading of an ordinance adopting by reference and amending the 2020 Los Angeles County Building, Electrical, Plumbing, Mechanical, Residential and Existing Building Codes; and
2. Schedule a public hearing on January 15, 2020 to consider adoption and second reading of the same ordinance.
3. Read by title only and waive further reading of an urgency ordinance adopting by reference and amending the 2020 Los Angeles County Building, Electrical, Plumbing, Mechanical, Residential and Existing Building Codes.

Title of the Ordinance to Read:

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SOUTH PASADENA, CALIFORNIA, MAKING CERTAIN FINDINGS; AMENDING THE CITY OF SOUTH PASADENA MUNICIPAL CODE BY MODIFYING CHAPTER 9 ARTICLE I THEROF ADOPTING BY REFERENCE THE 2020 LOS ANGELES COUNTY BUILDING CODE (TITLE 26), ELECTRICAL CODE (TITLE 27), PLUMBING CODE (TITLE 28), MECHANICAL CODE (TITLE 29), RESIDENTIAL CODE (TITLE 30), AND

EXISTING BUILDING CODE (TITLE 33) WITH CERTAIN AMENDMENTS, ADDITIONS AND DELETIONS THERETO

AN URGENCY ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SOUTH PASADENA, CALIFORNIA, MAKING CERTAIN FINDINGS; AMENDING THE CITY OF SOUTH PASADENA MUNICIPAL CODE BY MODIFYING CHAPTER 9 ARTICLE I THEROF ADOPTING BY REFERENCE THE 2020 LOS ANGELES COUNTY BUILDING CODE (TITLE 26), ELECTRICAL CODE (TITLE 27), PLUMBING CODE (TITLE 28), MECHANICAL CODE (TITLE 29), RESIDENTIAL CODE (TITLE 30), AND EXISTING BUILDING CODE (TITLE 33) WITH CERTAIN AMENDMENTS, ADDITIONS AND DELETIONS THERETO

Executive Summary

Every three years, the State adopts new codes (known collectively as the California Building Standards Code or "Title 24") to establish uniform standards for the construction and maintenance of buildings, electrical systems, plumbing systems, mechanical systems, and fire and life safety systems. Sections 17922, 17958 and 18941.5 of the California Health and Safety Code requires that the latest edition of the Title 24 be applied to local construction 180 days after publication by the state.

While State law requires local governments to enforce California Title 24, the law allows local governments to enact additional local amendments, but only where the Council can make a finding that these amendments are based on local climatic, geological, or topographical conditions.

The City of South Pasadena historically has adopted the Los Angeles County version of the codes (Title 24 plus Los Angeles County amendments) based on local conditions that include Santa Ana Winds, wildfires, and greater earthquake risk. Los Angeles County adopted their version of the code and amendments on November 26, 2019. Adoption of the Los Angeles County Codes by the City ensures that the codes used by the City set the safest standard permitted by law; are consistent with codes throughout the region; and are readily available to architects, engineers, and contractors.

Note: Two identical Ordinances are being brought before the City Council for 1st Reading. The Ordinances are identical in content. One Ordinance is by 'Urgency' and is to take effect January 1st, 2020. The Urgency Ordinance requires a four-fifths vote by the Council. The non-Urgency Ordinance will take effect 30 days after 2nd reading and adoption of the non-Urgency Ordinance. The need for the Ordinance adopting the County Codes by Urgency is due to the timing of Los Angeles County' adoption of their version on November 26, 2019 and the approaching deadline of January 1, 2020 for the City to begin enforcing Title 24 as required by state law.

Discussion/Analysis

In accordance with the California Health and Safety Code (commencing with §18935), the State of California adopts and publishes a series of construction codes that become California Title 24. The list of codes that currently make up Title 24 include the following:

a. Building Code (Title 24, Part 2);
b. Electrical Code (Title 24, Part 3);
c. Mechanical Code (Title 24, Part 4);
d. Plumbing Code (Title 24, Part 5);
e. Energy Code (Title 24, Part 6);
f. Historical Building Code (Title 24, Part 8);
g. Fire Code (Title 24, Part 9);
h. Existing Building Code (Title 24, Part 10);
i. Green Building Code (Title 24, Part 11);

Publication dates can vary, but the State attempts to publish an updated version of Title 24 every three years on July 1. When published on July 1, then the most current version of Title 24 is required to be enforced by local jurisdictions starting January 1st of the following year. The State successfully published the 2019 version of Title 24 on July 1, 2019.

The codes published by the State are intended to set a minimum statewide code compliance standard. Local jurisdictions are never permitted to enforce a requirement that is less restrictive than Title 24. Local jurisdictions may enforce a more restrictive requirement, but only if the board or council for the local jurisdiction has made a finding that the more restrictive requirement is necessary based on a local climatic, topographic, or geologic condition.

Each 3-year code cycle, the City and County of Los Angeles work together to adopt a series of more restrictive requirements based on local conditions that include Santa Ana Winds, wildfires, and greater earthquake risk. The County Board of Supervisors then makes a finding based on documentation provided by County staff that justifies the more restrictive requirements as part of the current County Codes.

Since the 1990s the City of South Pasadena has adopted the Los Angeles County version of the Construction Codes. Adoption of the County Codes is done for the following reasons:

1. Adoption by the City ensures that the codes used by the City set the safest standard permitted by law;

2. The County Codes are used throughout the majority of Los Angeles County. (The City of Los Angeles publishes its own codes, but the technical requirements are the same as the County Codes, only the administration differs.);

3. The County Codes are readily available for purchase by architects, engineers, and contractors.

Because the City cannot adopt a code that doesn't legally exist, the challenge for every code adoption cycle is that the City must wait for the County to complete their code adoption cycle before the City can start its code adoption cycle. First reading of the County Codes was heard on November 5, and the second reading and adoption by the Board of Supervisors occurred at the meeting on November 26, 2019. Adoption of the County Ordinances created the 2020 Los Angeles County Codes.

At the last code adoption cycle, the administrative requirements were formally codified into the City Municipal Code. Since the administration rarely changes, the City only needs to adopt the chapters from each of the County Codes (Building, Residential, Electrical, Mechanical, Plumbing, and Existing Building) that contain technical requirements.

As identified at the very beginning of this section, two identical Ordinances are appearing before the Council. An Urgency Ordinance for code adoption is being done to ensure that the County Codes are in enforceable within the City effective January 1st, 2020. Because the need for an Urgency Ordinance can always be challenged, a non-Urgency Ordinance is also appearing before the Council. If the Urgency Ordinance were deemed invalid for any reason after January 1st, 2020, the non-Urgency Ordinance would still be in place (and will become effective 30 days after 2nd reading and adoption by the Council). This adoption approach insures that the City is able to enforce the most current County Codes without any interruption.

Legal Review
The City Attorney has reviewed this item.

Fiscal Impact
There is no fiscal impact as a result of this ordinance.

Public Notification of Agenda Item
The public was made aware that this item was to be considered this evening by virtue of its inclusion on the legally publicly noticed agenda, posting of the same agenda and reports on the City's website and/or notice in the *South Pasadena Review* and/or the *Pasadena Star-News*.

Attachments:
1. Proposed City Ordinance to adopt by reference and amend the 2020 Los Angeles County Building, Residential, Electrical, Plumbing, Mechanical and Existing Building Codes
2. Proposed City Urgency Ordinance to adopt by reference and amend the 2020 Los Angeles County Building, Residential, Electrical, Plumbing, Mechanical and Existing Building Codes
3. Findings and Los Angeles County Ordinance adopting and amending the 2019 California Codes and creating the 2020 Los Angeles County Codes

ATTACHMENT 1

Ordinance to adopt by reference and amend the 2020 Los Angeles County Building, Residential, Electrical, Plumbing, Mechanical and Existing Building Codes

ORDINANCE NO. _____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SOUTH PASADENA, CALIFORNIA, MAKING CERTAIN FINDINGS; AMENDING THE CITY OF SOUTH PASADENA MUNICIPAL CODE BY MODIFYING CHAPTER 9 ARTICLE I THEREOF ADOPTING BY REFERENCE THE 2020 LOS ANGELES COUNTY BUILDING CODE (TITLE 26), ELECTRICAL CODE (TITLE 27), PLUMBING CODE (TITLE 28), MECHANICAL CODE (TITLE 29), RESIDENTIAL CODE (TITLE 30), AND EXISTING BUILDING CODE (TITLE 33) WITH CERTAIN AMENDMENTS, ADDITIONS AND DELETIONS THERETO

WHEREAS, the 2019 California Building, Residential, Electrical, Mechanical, Plumbing, and Existing Building Codes have been published by the California Building Standards Commission; and

WHEREAS, the City of South Pasadena (City) is permitted by state law to amend the California Building, Residential, Electrical, Mechanical, Plumbing, and Existing Building Codes (Title 24, Parts 2, 2.5, 3, 4, 5, and 10) by adoption and amendment only prior to January 1, 2020; and

WHEREAS, the County of Los Angeles has adopted by reference and amended the 2019 California Building (Ordinance Number 19-7011), Electrical (Ordinance Number 19-7012), Plumbing (Ordinance Number 19-7024), Mechanical (Ordinance Number 19-7013), Residential (Ordinance Number 19-7014), Existing Building (Ordinance Number 19-7016; and

WHEREAS, the City finds that the amendments to the California Building, Residential, Electrical, Mechanical, Plumbing, and Existing Building Codes as adopted by the County of Los Angeles are necessary and appropriate for the City because of local climatic, geologic and/or topographic conditions; and

WHEREAS, the City finds that further amendments to the 2020 Los Angeles County Building, Residential, Electrical, Mechanical, Plumbing, and Existing Building Codes are necessary because of local climatic, geologic and/or topographic conditions; and

WHEREAS, the City is located within the County of Los Angeles, and the City Council believes that the findings made by the Los Angeles County Board of Supervisors are applicable to and consistent with the desire of the City to provide the most technically proficient and safe construction codes possible; and

WHEREAS, the Los Angeles County Building, Residential, Electrical, Mechanical, Plumbing and Existing Building Codes are used throughout the County of Los Angeles and a significant portion of the incorporated cities within the County of Los Angeles; and

WHEREAS, the Los Angeles County Codes are common, readily available for purchase, and well known to contractors, engineers, and architects, and

WHEREAS, in accordance with Section 15061(b)(3) of Title 14 of the California Code of Regulations, the adoption of local amendments to the California Building Standards Code which amend the South Pasadena Municipal Code are exempt from the provisions of the California Environmental Quality Act.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF SOUTH PASADENA, CALIFORNIA, DOES RESOLVE, DECLARE, DETERMINE AND ORDER AS FOLLOWS:

SECTION 1. Chapter 9 ("Buildings"), Article 1 ("Code Adoption and Amendments), Section 9.1.1 of the South Pasadena Municipal Code (SPMC) is amended to read as follow:

"9.1.1 2020 LOS ANGELES COUNTY CODE, TITLE 26, BUILDING CODE ADOPTED – WHERE FILED.

Chapters 2 through 35, 66, 67, 96, 98, 99 and Appendices I and J of Title 26, Los Angeles County Building Code, as amended and in effect on or before January 1, 2020, adopting the 2019 California Building Code, is hereby adopted by reference pursuant to the provisions of Sections 50022.1 through 50022.10 of the Government Code of the State of California as though fully set forth herein, and made a part of the South Pasadena Municipal Code with the same force and effect as though set out herein in full, including all of the regulations, revisions, conditions and terms contained therein except as revised in this ordinance.

In accordance with Section 50022.6 of the California Government Code, not less than one copy of said Title 26 of the Los Angeles County Building Code together with any and all amendments thereto proposed by the City, has been and is now filed in the office of the Planning and Building Department, shall be remain on file with the Building Official, shall collectively be known as the *City of South Pasadena Building Code* and may be cited as Chapter 9, Article 1 Section 9.1 of the City of South Pasadena Municipal Code."

SECTION 2. Chapter 9 ("Buildings"), Article 1 ("Code Adoption and Amendments), Section 9.1.2 ("City Specific Modifications") of the South Pasadena Municipal Code (SPMC) is amended to read as follows:

"9.1.2 CITY SPECIFIC MODIFICATIONS

Chapters 9, 15, 33, 96, 99 and Appendix J of Title 26 of the 2020 Los Angeles County Code (the Los Angeles County Building Code), which adopts by reference and amends California Code of Regulations Title 24, Part 2 and Part 10 (the 2019 California Building Code) adopted by reference as the Building Code of the City, are hereby amended, deleted or added as follows:

1. Chapter 9 of the Building Code is deleted in its entirety and replaced with Chapter 9 of California Fire Code as adopted and amended by SPMC Chapter 14 Fire Prevention, Section 14.4, Fire Code Amended.

2. Section 1505.1.3 is amended in its entirety to read:

   Section 1505.1.3 Roof Coverings. Except as permitted per SPMC Chapter 14 Fire Prevention, Section 14.1.2 Special provisions related to roof types, all roof covering of every structure shall be Class A.

3. A new Section 3301.3 is added to read:

   3301.3 On-Site Fencing During Construction.

   3301.3.1 General. A fence shall be provided any time grading, demolition, or construction work requiring a grading or building permit is performed. The fence shall totally enclose the perimeter of all property. Locking gates may be provided at any location.

   Exceptions:

   1) When approved by the building official, a fence need not enclose residential property when at least one dwelling is continuously occupied. Approval not to fence the property may be revoked in writing by the building official if the property is found to be unoccupied for any length of time. For the purposes of this exception, continuously occupied is not intended to imply that the occupants must be continuously present.

   2) When approved by the building official, the fence may enclose areas other than the perimeter of the property.

   3301.3.2 Fence Construction. The fence shall be 6 feet in height measured from adjacent grade on the exterior side of the fence, and constructed from chain link, lumber, masonry or other approved materials. The fence shall be self-supporting and shall not incorporate structures or fencing on adjacent property without written approval of the adjacent property owner.

3301.3.3 Duration of Fencing. The fence shall be erected prior to the start of any grading, demolition, or construction work and shall remain in place until the work for which a grading or building permit is required has been completed.

Exceptions:

1) All or portions of the fence may be removed daily during construction so long as the property is continuously occupied, and all portions of the removed fence are replaced prior to the property being unoccupied.

2) When approved by the building official, the fence may be removed prior to completion of the grading, demolition, or construction work, if the property is determined by the building official to no longer provide an unsafe or hazardous condition.

3301.3.4 Failure to Comply. If the property is found unfenced and the building official determines that an unsafe or hazardous condition exists, the City may take action to correct the noncomplying condition by providing the required fence. The building official may then issue a notice to stop work until all fees incurred by the City to properly fence the property have been recovered. If such fees have not been recovered by the City within 30 days, the City may take action to recover the costs in accordance with the requirements of the Code(s) having jurisdiction over any portion of the work.

4. Section 9605.1 is amended in its entirety to read:

9605.1 Time Limitations. The owner of each building within the scope of the 2020 Los Angeles County Building Code Chapter 96 shall, upon receipt of a Service Order and within the time limits set forth in this Ordinance, cause a structural analysis to be made of the building by a licensed civil engineer or architect. If the building does not comply with standards specified in this Chapter and Existing Building Code Appendix Chapter A1 of Part 10, Title 24 of the California Code of Regulations, then the owner shall cause the building to be structurally altered to conform to such standards or shall cause the building to be demolished.

No person shall make any exterior modification or demolish any structure listed on the City's Inventory of Cultural Resources without prior review by the Cultural Heritage Commission and issuance of a Certificate of Appropriateness pursuant to South Pasadena Municipal Code Section 2.64 or any successor regulation.

Where a Certificate of Appropriateness is required, no plans may be submitted to the Building Division for plan review, and no permits shall be issued for covered work without the required Certificate of Appropriateness.

1. **Compliance by Alteration.** Where the building owner intends to comply by structural alteration of the building found to be within the scope of this Ordinance, the owner shall complete the structural alteration work in accordance with the following time limits:

   a. i) Within 120 calendar days of receipt of the Service Order, the building owner is required to provide documentation to the City from a California registered civil or structural engineer or licensed architect that their building is not an unreinforced masonry bearing wall building subject to the requirements of this Ordinance; or

   a. ii) Within 120 calendar days of receipt of the Service Order, the building owner is required to select and contract with a California registered civil or structural engineer or licensed architect to prepare structural alteration plan in compliance with Chapter 96;

   b. Within twelve (12) calendar months after service of the order, the building owner is required to submit plans to the Planning and Building Department for building plan check review of the proposed structural alteration work;

   c. Within eighteen (18) months of receipt of the Service Order, the building owner is to obtain plan check approval of the structural alteration work that is to be performed;

   d. Within twenty-one (21) months of receipt of the Service Order, the building owner is to obtain a permit and commence construction of the structural alteration work;

   e. Within thirty (30) months of receipt of the Service Order, the building owner is to complete the structural alteration work, and to have the permit finaled by the Planning and Building Department.

2. **Compliance by Demolition.** Where the building owner intends to comply with the requirements of this ordinance by demolition, the owner shall comply with the following time limits:

   a. i) Within 180 calendar days of receipt of the Service Order, the building owner is required to provide documentation to the City from a California registered civil or structural engineer that their building is not an unreinforced masonry bearing wall building subject to the requirements of this Ordinance; or

a. ii) Within 180 days of receipt of the Service Order, notify the City of the intent to demolish the building, submit all required applications and pay all required fees associated with a request to demolish the building;

b. Within twelve (12) calendar months of receipt of the Service Order, obtain a demolition permit and commence demolition;

c. Within eighteen (18) calendar months of receipt of the Service Order, complete the demolition work.

5. Section 9605.2 is deleted in its entirety.

6. Section 9606.1 is amended in its entirety to read:

9606.1 Order-service. The Building Official shall issue an order as provided in this Section to the owner of each building within the scope of Chapter 96 of the Building Code.

7. Section 9606.2 is deleted in its entirety.

8. Section 9606.10 is amended in its entirety to read:

9606.10 (Other abatement procedures) The City shall have the unrestricted ability to enforce compliance with this ordinance by any means prescribed by the South Pasadena Municipal Code, the Building Code or other laws including, but not limited to, ordering the building vacated, termination of all utilities, and/or nuisance abatement including civil and/or criminal prosecution.

9. Table 96-B (Time Limits for Compliance) is deleted in its entirety.

10. Table 96-C (Extensions of Time and Service Priorities) is deleted in its entirety.

11. Section 9903.2 is amended to read:

9903.2 Any unfinished building or structure that has been in the course of construction for an unreasonable period of time, and where the appearance and other conditions of said unfinished building or structure are such that the unfinished structure substantially detracts from the appearance of the immediate neighborhood or reduces the value of property in the immediate neighborhood, or is otherwise a nuisance, shall be deemed and hereby is declared a substandard building.

For the purposes of this Section, an unreasonable period of time shall be defined as eighteen (18) months for residential construction or construction located in a

Residential Zone, and thirty-six (36) months for all other construction. For the purpose of the Section, residential construction shall also include detached garages and similar accessory structures that serve a residential structure or are located within a Residential Zone.

12. Section J103.5 is amended in its entirety to read:

J 103.5 Grading Fees. Fees shall be assessed in accordance with the provisions of this section. The amount of the fees shall be as specified in the fee resolution.

J 103.5.1 Plan Review Fees. When a plan or other data are required to be submitted, a plan review fee shall be paid at the time of submitting plans and specifications for review. Separate plan review fees shall apply to retaining walls or major drainage structures as required elsewhere in any code. For excavation and fill on the same site, the fee shall be based on the total volume of earth handled of excavation and fill.

J 103.5.2 Permit Fees. A fee for each grading permit shall be paid to the Building Official at the time of issuance of the permit. Separate permits and fees shall apply to retaining walls or major drainage structures as required elsewhere in any code.

13. Section J 103.6 is amended in its entirety to read:

J 103.6 Compliance with Zoning Code. The building official may refuse to issue a grading permit for work on a site if either the proposed grading or the proposed land use for the site shown on the grading plan application does not comply with the provisions of "Planning and Zoning**"** of the SPMC.

14. Section J105.12 is amended in its entirety to read:

J105.12 Completion of work. Upon completion of the rough grading work and at the final completion of the work, the following reports and drawings and supplements thereto are required for engineered grading or when professional inspection is otherwise required by the Building Official:

1. A certification by the Field Engineer that to the best of his or her knowledge, the work within the Field Engineer's area of responsibility was done in accordance with the final approved grading plan.

2. A report prepared by the Soils Engineer retained to provide such services in accordance with Section J105.4, including locations and elevations of field density tests, summaries of field and laboratory tests, other substantiating data, and comments on any changes made during grading and their effect on the recommendations made in the approved soils

engineering investigation report. The report shall include a certification by the Soils Engineer that to the best of his or her knowledge, the work within the Soils Engineer's area of responsibility is in accordance with the approved Soils Engineering report and applicable provisions of the Building Code. The report shall contain a finding regarding the safety of the completed grading and any proposed structures against hazard from landslide, settlement, or slippage.

3. A report prepared by the Engineering Geologist retained to provide such services in accordance with Section J105.5, including a final description of the geology of the site and any new information disclosed during the grading and the effect of such new information, if any, on the recommendations incorporated in the approved grading plan. The report shall contain a certification by the Engineering Geologist that, to the best of his or her knowledge, the work within the Engineering Geologist's area of responsibility is in accordance with the approved engineering geology report and applicable provisions of the Building Code. The report shall contain a finding regarding the safety of the completed grading and any proposed structures against hazard from landslide, settlement. or slippage. The report shall contain a final as-built geologic map and cross-sections depicting all the information collected prior to and during grading.

4. The grading contractor shall certify, on a form prescribed by the building official that the grading conforms to the approved plans and specifications."

SECTION 3. Chapter 9 ("Buildings"), Article 1 ("Code Adoption and Amendments), Section 9.2.1 ("Los Angeles County Code, Title 27, Electrical Code Adopted") of the South Pasadena Municipal Code (SPMC) is amended to read as follows;

"9.2.1 2020 LOS ANGELES COUNTY CODE, TITLE 27, ELECTRICAL CODE ADOPTED

Los Angeles County Electrical Code Article 90, Chapter 1 through 9, and Annexes A, B, C, D, E, F, G, H, I and J, Title 27, The 2019 Los Angeles County Electrical Code, as amended and in effect on or before January 1, 2020, adopting the 2019 California Electrical Code, except as otherwise provided in said Title 27, is hereby adopted by reference pursuant to the provisions of Sections 50022.1 through 50022. 10 of the Government Code of the State of California as though fully set forth herein, and made a part of the South Pasadena Municipal Code with the same force and effect as though set out herein in full, including all the regulations, revisions, conditions and terms contained therein.

In accordance with California Government Code Section 50022.6, one copy of said Los Angeles County Electrical Code will remain on file with the building official

within the planning and building department and shall be at all times maintained by the building official for use and examination by the public."

SECTION 4. Chapter 9 ("Buildings"), Article 1 ("Code Adoption and Amendments), Section 9.3.1 ("Los Angeles County Code, Title 28, Plumbing Code Adopted") of the South Pasadena Municipal Code (SPMC) is amended to read as follows:

"9.3.1 2020 LOS ANGELES COUNTY CODE, TITLE 28, PLUMBING CODE ADOPTED

Los Angeles County Plumbing Code Chapter 2 through Chapter 17, and Appendices A.B, D, H, I and J, Title 28, the 2020 Los Angeles County Plumbing Code, as amended and in effect on or before January 1, 2020, adopting the 2019 California Plumbing Code, is hereby adopted by reference pursuant to the provisions of Sections 50022.1 through 50022.10 of the Government Code of the State of California as though fully set forth herein, and made a part of the South Pasadena Municipal Code with the same force and effect as though set out herein in full, including all of the regulations, revisions, conditions and terms contained.

In accordance with California Government Code Section 50022.6, one copy of said Los Angeles County Plumbing Code will remain on file with the building official within the planning and building department and shall be at all times maintained by the building official for use and examination by the public."

SECTION 5. Chapter 9 ("Buildings"), Article 1 ("Code Adoption and Amendments), Section 9.4.1 ("Los Angeles Code Code, Title 29,Mechanical CodeAdopted") of the South Pasadena Municipal Code (SPMC) is amended to read as follows:

"9.4.1 2020 LOS ANGELES COUNTY CODE, TITLE 29, MECHANICAL CODE ADOPTED

Los Angeles County Mechanical Code Chapter 2 through Chapter 17 and Appendices B, C and D, Title 29, the 2020 Los Angeles County Mechanical Code, as amended and in effect on or before January 1, 2020, adopting the 2019 California Mechanical Code, is hereby adopted by reference pursuant to the provisions of Sections 50022.1 through 50022.10 of the Government Code of the State of California as though fully set forth herein, and made a part of the South Pasadena Municipal Code with the same force and effect as though set out herein in full, including all of the regulations, revisions, conditions and terms contained therein.

In accordance with California Government Code Section 50022.6, one copy of said Los Angeles County Mechanical Code will remain on file with building official within the Planning and Building Department and shall be at all times maintained by the building official for use and examination by the public."

SECTION 6. Chapter 9 ("Buildings"), Article 1 ("Code Adoption and Amendments), Section 9.5.1 (Los Agneles County Code, Title 30, Residential Code Adopted") of the South Pasadena Municipal Code (SPMC) is amended to read as follow

"9.5.1 2020 LOS ANGELES COUNTY CODE, TITLE 30, RESIDENTIAL CODE ADOPTED

Section 1206 (Sound Transmission) of Chapter 12, Chapters 67, 69, 96, 98, 99, and appendix J of Title 26 of the Los Angeles County Building Code are adopted by reference as amended by City Building Code (9.1) and incorporated in to this Section 9.5.1 as if fully set forth below and shall be known as Section 1206 (Sound Transmission) of Chapter 12, Chapters 67, 69, 96, 98, 99, and appendix J of the City Residential Code.

Chapters 2 through 10, 44 and Appendix H of Title 30, Los Angeles County Residential Code, as amended and in effect on or before January 1, 2020, adopting the 2019 California Residential Code, is hereby adopted by reference pursuant to the provisions of Sections 50022.1 through 50022.10 of the Government Code of the State of California as though fully set forth herein, and made a part of the South Pasadena Municipal Code with the same force and effect as though set out herein in full, including all of the regulations, revisions, conditions and terms contained therein except that those certain sections thereof which are necessary to meet local conditions as hereinafter set forth in Section 9.5.2 of this Code are hereby repealed, added or amended to read as set forth therein.

In accordance with California Government Code Section 50022.6, one copy of said Los Angeles County Building Code will remain on file with the building official within the Planning and Building Department and shall be at all times maintained by the building official for use and examination by the public"

SECTION 7. Chapter 9 ("Buildings"), Article 1 ("Code Adoption and Amendments), Section 9.5.2 ("City Specific Modifications") of the South Pasadena Municipal Code (SPMC) is amended to read as follows:

"9.5.2 CITY SPECIFIC MODIFICATIONS

Chapter 3 of Title 30 of the Los Angeles County Code (the Los Angeles County Residential Code), which adopts by reference and amends California Code of Regulations Title 24, Part 2.5 (the 2019 California Residential Code) adopted by reference as the Residential Code of the City, are hereby amended, deleted or added as follows:

a. Section R313 is deleted in its entirety and replaced with section 903 of the Chapter 9 Section 903 of California Fire Code as adopted and amended by SPMC Chapter 14 Fire Prevention, Section 14.4, Fire Code Amended.

b. Section R902.2 is amended in its entirety to read:

R902.2 Roof Coverings in All Areas. Except as permitted per SPMC Chapter 14 Fire Prevention, Section 14.1.2 Special provisions related to roof types, all roof covering of every structure shall be Class A."

SECTION 8. Chapter 9 ("Buildings"), Article 1 ("Code Adoption and Amendments), Section 9.6.1 ("Los Angeles County Code, Title 33, Existing Building Code Adopted") of the South Pasadena Municipal Code (SPMC) is amended to read as follows:

"9.6.1 LOS ANGELES COUNTY CODE, TITLE 33, EXISTING BUILDING CODE ADOPTED

Los Angeles County Existing Building Code Chapter 2 through 4, 15, 16 and Appendix A, Chapter A1, A3, A4 and A5 of the Title 33, the 2020 Los Angeles County Existing Building Code, as amended and in effect on or before January 1, 2020, adopting the 2019 California Existing Building Code, is hereby adopted by reference pursuant to the provisions of Sections 50022.1 through 50022.10 of the Government Code of the State of California as though fully set forth herein, and made a part of the South Pasadena Municipal Code with the same force and effect as though set out herein in full, including all of the regulations, revisions, conditions and terms contained therein.

In accordance with California Government Code Section 50022.6, one copy of said Los Angeles County Building Code will remain on file with the building official within the Planning and Building Department and shall be at all times maintained by the building official for use and examination by the public."

SECTION 9. The adoption of the City Building Code, Electrical Code, Plumbing Code, Mechanical Code, Residential Code and Existing Building Code and the repeal, addition or amendment of ordinances by this Code shall not affect the following matters:

1. Actions and proceedings which began the effective date of this Code.

2. Prosecution for ordinance violations committed before the effective date of this Code.

3. Licenses and penalties due and unpaid at the effective date of this Code, and the collection of these licenses and penalties.

4. Bonds and cash deposits required to be posted, filed or deposited pursuant to any ordinance.

5. Matters of record which refer to or are connected with ordinances the substances of which are included in this code; these references shall be construed to apply to the corresponding provisions of the Code.

SECTION 10. The adoption of the City Building Code, Electrical Code, Plumbing Code, Mechanical Code, Residential Code and Existing Building Code and the repeal, addition or amendment of ordinances by this Code shall not affect the following matters:

1. General penalty; continuing violations. Every act prohibited or declared unlawful and every failure to perform an act required by this Code is a misdemeanor or an infraction as set forth in the said respective pertinent sections of this Code and any person causing or permitting a violation of any such section of said Code shall be subject to the penalties ascribed to each such section as set forth herein.

2. Violations including aiding, abetting, and concealing. Every person who causes, aids, abets or conceals the fact of a violation of this Code is guilty of violating this Code.

3. Enforcement by civil action. In addition to the penalties provided herein, the said Code may be enforced by civil action. Any condition existing in violation of this Code is a public nuisance and may be summarily abated by the city.

SECTION 11. The City Council hereby declares that, should any provision, section, subsection, paragraph, sentence, clause, phrase, or word of this ordinance or any part thereof, be rendered or declared invalid or unconstitutional by any final court action in a court of competent jurisdiction or by reason of any preemptive legislation, such decision or action shall not affect the validity of the remaining section or portions of the ordinance or part thereof. The City Council hereby declares that it would have independently adopted the remaining provisions, sections, subsections, paragraphes, sentences, clauses, phrases, or words of this ordinance irrespective of the fact that any one or more provisions, sections, subsections, paragraphs, sentences, clauses, phrases, or words may be declared invalid or unconstitutional.

SECTION 12. This ordinance shall take effect thirty (30) days after its final passage by City Council, and within fifteen (15) days after its passage the City Clerk of the City of South Pasadena shall certify to the passage and adoption of this ordinance and to its approval by the Mayor and City Council, shall cause the same to be published in a newspaper in the manner required by law, and shall cause the same to be filed with the California Building Standards Commission at 2525 Natomas Park Drive, Suite 130, Sacramento, CA 95833.

PASSED, APPROVED, AND ADOPTED this 15th day of January 2020.

_____
Robert S. Joe, Mayor

ATTEST:

_____
Evelyn G. Zneimer, City Clerk
(seal)

APPROVED AS TO FORM:

_____
Teresa L. Highsmith, City Attorney

Date: _____

I HEREBY CERTIFY the foregoing ordinance was duly adopted by the City Council of the City of South Pasadena, California, at a regular meeting held on the 15th day of January 2020, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAINED:

_____
Evelyn G. Zneimer, City Clerk
(seal)

ATTACHMENT 2

Urgency Ordinance to adopt by reference and amend the 2020 Los Angeles County Building, Residential, Electrical, Plumbing, Mechanical and Existing Building Codes

URGENCY ORDINANCE NO. ___

AN URGENCY ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SOUTH PASADENA, CALIFORNIA, MAKING CERTAIN FINDINGS; AMENDING THE CITY OF SOUTH PASADENA MUNICIPAL CODE BY MODIFYING CHAPTER 9 ARTICLE I THEREOF ADOPTING BY REFERENCE THE 2020 LOS ANGELES COUNTY BUILDING CODE (TITLE 26), ELECTRICAL CODE (TITLE 27), PLUMBING CODE (TITLE 28), MECHANICAL CODE (TITLE 29), RESIDENTIAL CODE (TITLE 30), AND EXISTING BUILDING CODE (TITLE 33) WITH CERTAIN AMENDMENTS, ADDITIONS AND DELETIONS THERETO

WHEREAS, the 2019 California Building, Residential, Electrical, Mechanical, Plumbing, and Existing Building Codes have been published by the California Building Standards Commission; and

WHEREAS, the City of South Pasadena (City) is permitted by state law to amend the California Building, Residential, Electrical, Mechanical, Plumbing, and Existing Building Codes (Title 24, Parts 2, 2.5, 3, 4, 5, and 10) by adoption and amendment only prior to January 1, 2020; and

WHEREAS, the County of Los Angeles has adopted by reference and amended the 2019 California Building (Ordinance Number 19-7011), Electrical (Ordinance Number 19-7012), Plumbing (Ordinance Number 19-7024), Mechanical (Ordinance Number 19-7013), Residential (Ordinance Number 19-7014), Existing Building (Ordinance Number 19-7016; and

WHEREAS, the City finds that the amendments to the California Building, Residential, Electrical, Mechanical, Plumbing, and Existing Building Codes as adopted by the County of Los Angeles are necessary and appropriate for the City because of local climatic, geologic and/or topographic conditions; and

WHEREAS, the City finds that further amendments to the 2020 Los Angeles County Building, Residential, Electrical, Mechanical, Plumbing, and Existing Building Codes are necessary because of local climatic, geologic and/or topographic conditions; and

WHEREAS, the City is located within the County of Los Angeles, and the City Council believes that the findings made by the Los Angeles County Board of Supervisors are applicable to and consistent with the desire of the City to provide the most technically proficient and safe construction codes possible; and

WHEREAS, the Los Angeles County Building, Residential, Electrical, Mechanical, Plumbing and Existing Building Codes are used throughout the County of Los Angeles and a significant portion of the incorporated cities within the County of Los Angeles; and

WHEREAS, the Los Angeles County Codes are common, readily available for purchase, and well known to contractors, engineers, and architects, and

WHEREAS, in accordance with Section 15061(b)(3) of Title 14 of the California Code of Regulations, the adoption of local amendments to the California Building Standards Code which amend the South Pasadena Municipal Code are exempt from the provisions of the California Environmental Quality Act.

WHEREAS, Unless the City Council adopts an urgency ordinance to become effective on January 1, 2020, the 2019 California Building, Electrical, Plumbing, Mechanical, Residential, Existing Building and Fire Codes without amendments necessary to preserve the public peace, health, safety and welfare of the City of South Pasadena will go into effect until the amendment to the code can become legally effective through the standard process of Code adoption. This will result in a gap in the implementation of the more stringent Code regulations necessary for the City of South Pasadena due to its unique climatic, geological and topographical characteristics. The City Council hereby finds that such a gap in the implementation of said more stringent Code regulations will result in an immediate threat to the public health, safety and welfare of the City of South Pasadena.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF SOUTH PASADENA, CALIFORNIA, DOES RESOLVE, DECLARE, DETERMINE AND ORDER AS FOLLOWS:

SECTION 1. Chapter 9 ("Buildings"), Article 1 ("Code Adoption and Amendments), Section 9.1.1 of the South Pasadena Municipal Code (SPMC) is amended to read as follow:

"9.1.1 2020 LOS ANGELES COUNTY CODE, TITLE 26, BUILDING CODE ADOPTED – WHERE FILED.

Chapters 2 through 35, 66, 67, 96, 98, 99 and Appendices I and J of Title 26, Los Angeles County Building Code, as amended and in effect on or before January 1, 2020, adopting the 2019 California Building Code, is hereby adopted by reference pursuant to the provisions of Sections 50022.1 through 50022.10 of the Government Code of the State of California as though fully set forth herein, and made a part of the South Pasadena Municipal Code with the same force and effect as though set out herein in full, including all of the regulations, revisions, conditions and terms contained therein except as revised in this ordinance.

In accordance with Section 50022.6 of the California Government Code, not less than one copy of said Title 26 of the Los Angeles County Building Code together with any and all amendments thereto proposed by the City, has been and is now filed in

the office of the Planning and Building Department, shall be remain on file with the Building Official, shall collectively be known as the *City of South Pasadena Building Code* and may be cited as Chapter 9, Article 1 Section 9.1 of the City of South Pasadena Municipal Code."

SECTION 2. Chapter 9 ("Buildings"), Article 1 ("Code Adoption and Amendments), Section 9.1.2 ("City Specific Modifications") of the South Pasadena Municipal Code (SPMC) is amended to read as follows:

"9.1.2 CITY SPECIFIC MODIFICATIONS

Chapters 9, 15, 33, 96, 99 and Appendix J of Title 26 of the 2020 Los Angeles County Code (the Los Angeles County Building Code), which adopts by reference and amends California Code of Regulations Title 24, Part 2 and Part 10 (the 2019 California Building Code) adopted by reference as the Building Code of the City, are hereby amended, deleted or added as follows:

1. Chapter 9 of the Building Code is deleted in its entirety and replaced with Chapter 9 of California Fire Code as adopted and amended by SPMC Chapter 14 Fire Prevention, Section 14.4, Fire Code Amended.

2. Section 1505.1.3 is amended in its entirety to read:

   Section 1505.1.3 Roof Coverings. Except as permitted per SPMC Chapter 14 Fire Prevention, Section 14.1.2 Special provisions related to roof types, all roof covering of every structure shall be Class A.

3. A new Section 3301.3 is added to read:

   3301.3 On-Site Fencing During Construction.

   3301.3.1 General. A fence shall be provided any time grading, demolition, or construction work requiring a grading or building permit is performed. The fence shall totally enclose the perimeter of all property. Locking gates may be provided at any location.

   Exceptions:

   1) When approved by the building official, a fence need not enclose residential property when at least one dwelling is continuously occupied. Approval not to fence the property may be revoked in writing by the building official if the property is found to be unoccupied for any length of time. For the purposes of this exception, continuously occupied is not intended to imply that the occupants must be continuously present.

   2) When approved by the building official, the fence may enclose areas other than the perimeter of the property.

3301.3.2 Fence Construction. The fence shall be 6 feet in height measured from adjacent grade on the exterior side of the fence, and constructed from chain link, lumber, masonry or other approved materials. The fence shall be self-supporting and shall not incorporate structures or fencing on adjacent property without written approval of the adjacent property owner.

3301.3.3 Duration of Fencing. The fence shall be erected prior to the start of any grading, demolition, or construction work and shall remain in place until the work for which a grading or building permit is required has been completed.

Exceptions:

1) All or portions of the fence may be removed daily during construction so long as the property is continuously occupied, and all portions of the removed fence are replaced prior to the property being unoccupied.

2) When approved by the building official, the fence may be removed prior to completion of the grading, demolition, or construction work, if the property is determined by the building official to no longer provide an unsafe or hazardous condition.

3301.3.4 Failure to Comply. If the property is found unfenced and the building official determines that an unsafe or hazardous condition exists, the City may take action to correct the noncomplying condition by providing the required fence. The building official may then issue a notice to stop work until all fees incurred by the City to properly fence the property have been recovered. If such fees have not been recovered by the City within 30 days, the City may take action to recover the costs in accordance with the requirements of the Code(s) having jurisdiction over any portion of the work.

4. Section 9605.1 is amended in its entirety to read:

9605.1 Time Limitations. The owner of each building within the scope of the 2020 Los Angeles County Building Code Chapter 96 shall, upon receipt of a Service Order and within the time limits set forth in this Ordinance, cause a structural analysis to be made of the building by a licensed civil engineer or architect. If the building does not comply with standards specified in this Chapter and Existing Building Code Appendix Chapter A1 of Part 10, Title 24 of the California Code of Regulations, then the owner shall cause the building to be structurally altered to conform to such standards or shall cause the building to be demolished.

No person shall make any exterior modification or demolish any structure listed on the City's Inventory of Cultural Resources without prior review by the Cultural Heritage Commission and issuance of a Certificate of Appropriateness pursuant to South Pasadena Municipal Code Section 2.64 or any successor regulation.

Where a Certificate of Appropriateness is required, no plans may be submitted to the Building Division for plan review, and no permits shall be issued for covered work without the required Certificate of Appropriateness.

1. Compliance by Alteration. Where the building owner intends to comply by structural alteration of the building found to be within the scope of this Ordinance, the owner shall complete the structural alteration work in accordance with the following time limits:

a. i) Within 120 calendar days of receipt of the Service Order, the building owner is required to provide documentation to the City from a California registered civil or structural engineer or licensed architect that their building is not an unreinforced masonry bearing wall building subject to the requirements of this Ordinance; or

a. ii) Within 120 calendar days of receipt of the Service Order, the building owner is required to select and contract with a California registered civil or structural engineer or licensed architect to prepare structural alteration plan in compliance with Chapter 96;

b. Within twelve (12) calendar months after service of the order, the building owner is required to submit plans to the Planning and Building Department for building plan check review of the proposed structural alteration work;

c. Within eighteen (18) months of receipt of the Service Order, the building owner is to obtain plan check approval of the structural alteration work that is to be performed;

d. Within twenty-one (21) months of receipt of the Service Order, the building owner is to obtain a permit and commence construction of the structural alteration work;

e. Within thirty (30) months of receipt of the Service Order, the building owner is to complete the structural alteration work, and to have the permit finaled by the Planning and Building Department.

2. Compliance by Demolition. Where the building owner intends to comply with the requirements of this ordinance by demolition, the owner shall comply with the following time limits:

a. i) Within 180 calendar days of receipt of the Service Order, the building owner is required to provide documentation to the

City from a California registered civil or structural engineer that their building is not an unreinforced masonry bearing wall building subject to the requirements of this Ordinance; or

a. ii) Within 180 days of receipt of the Service Order, notify the City of the intent to demolish the building, submit all required applications and pay all required fees associated with a request to demolish the building;

b. Within twelve (12) calendar months of receipt of the Service Order, obtain a demolition permit and commence demolition;

c. Within eighteen (18) calendar months of receipt of the Service Order, complete the demolition work.

5. Section 9605.2 is deleted in its entirety.

6. Section 9606.1 is amended in its entirety to read:

9606.1 Order-service. The Building Official shall issue an order as provided in this Section to the owner of each building within the scope of Chapter 96 of the Building Code.

7. Section 9606.2 is deleted in its entirety.

8. Section 9606.10 is amended in its entirety to read:

9606.10 (Other abatement procedures) The City shall have the unrestricted ability to enforce compliance with this ordinance by any means prescribed by the South Pasadena Municipal Code, the Building Code or other laws including, but not limited to, ordering the building vacated, termination of all utilities, and/or nuisance abatement including civil and/or criminal prosecution.

9. Table 96-B (Time Limits for Compliance) is deleted in its entirety.

10. Table 96-C (Extensions of Time and Service Priorities) is deleted in its entirety.

11. Section 9903.2 is amended to read:

9903.2 Any unfinished building or structure that has been in the course of construction for an unreasonable period of time, and where the appearance and other conditions of said unfinished building or structure are such that the unfinished structure substantially detracts from the appearance of the immediate neighborhood or reduces the value of property in the immediate neighborhood, or is otherwise a nuisance, shall be deemed and hereby is declared a substandard building.

For the purposes of this Section, an unreasonable period of time shall be defined as eighteen (18) months for residential construction or construction located in a Residential Zone, and thirty-six (36) months for all other construction. For the purpose of the Section, residential construction shall also include detached garages and similar accessory structures that serve a residential structure or are located within a Residential Zone.

12. Section J103.5 is amended in its entirety to read:

J 103.5 Grading Fees. Fees shall be assessed in accordance with the provisions of this section. The amount of the fees shall be as specified in the fee resolution.

J 103.5.1 Plan Review Fees. When a plan or other data are required to be submitted, a plan review fee shall be paid at the time of submitting plans and specifications for review. Separate plan review fees shall apply to retaining walls or major drainage structures as required elsewhere in any code. For excavation and fill on the same site, the fee shall be based on the total volume of earth handled of excavation and fill.

J 103.5.2 Permit Fees. A fee for each grading permit shall be paid to the Building Official at the time of issuance of the permit. Separate permits and fees shall apply to retaining walls or major drainage structures as required elsewhere in any code.

13. Section J 103.6 is amended in its entirety to read:

J 103.6 Compliance with Zoning Code. The building official may refuse to issue a grading permit for work on a site if either the proposed grading or the proposed land use for the site shown on the grading plan application does not comply with the provisions of "Planning and Zoning**"** of the SPMC.

14. Section J105.12 is amended in its entirety to read:

J105.12 Completion of work. Upon completion of the rough grading work and at the final completion of the work, the following reports and drawings and supplements thereto are required for engineered grading or when professional inspection is otherwise required by the Building Official:

1. A certification by the Field Engineer that to the best of his or her knowledge, the work within the Field Engineer's area of responsibility was done in accordance with the final approved grading plan.

2. A report prepared by the Soils Engineer retained to provide such services in accordance with Section J105.4, including locations and elevations of field density tests, summaries of field and laboratory tests, other substantiating data, and comments on any changes made during grading

and their effect on the recommendations made in the approved soils engineering investigation report. The report shall include a certification by the Soils Engineer that to the best of his or her knowledge, the work within the Soils Engineer's area of responsibility is in accordance with the approved Soils Engineering report and applicable provisions of the Building Code. The report shall contain a finding regarding the safety of the completed grading and any proposed structures against hazard from landslide, settlement, or slippage.

3. A report prepared by the Engineering Geologist retained to provide such services in accordance with Section J105.5, including a final description of the geology of the site and any new information disclosed during the grading and the effect of such new information, if any, on the recommendations incorporated in the approved grading plan. The report shall contain a certification by the Engineering Geologist that, to the best of his or her knowledge, the work within the Engineering Geologist's area of responsibility is in accordance with the approved engineering geology report and applicable provisions of the Building Code. The report shall contain a finding regarding the safety of the completed grading and any proposed structures against hazard from landslide, settlement. or slippage. The report shall contain a final as-built geologic map and cross-sections depicting all the information collected prior to and during grading.

4. The grading contractor shall certify, on a form prescribed by the building official that the grading conforms to the approved plans and specifications."

SECTION 3. Chapter 9 ("Buildings"), Article 1 ("Code Adoption and Amendments), Section 9.2.1 ("Los Angeles County Code, Title 27, Electrical Code Adopted") of the South Pasadena Municipal Code (SPMC) is amended to read as follows;

"9.2.1 2020 LOS ANGELES COUNTY CODE, TITLE 27, ELECTRICAL CODE ADOPTED

Los Angeles County Electrical Code Article 90, Chapter 1 through 9, and Annexes A, B, C, D, E, F, G, H, I and J, Title 27, The 2019 Los Angeles County Electrical Code, as amended and in effect on or before January 1, 2020, adopting the 2019 California Electrical Code, except as otherwise provided in said Title 27, is hereby adopted by reference pursuant to the provisions of Sections 50022.1 through 50022. 10 of the Government Code of the State of California as though fully set forth herein, and made a part of the South Pasadena Municipal Code with the same force and effect as though set out herein in full, including all the regulations, revisions, conditions and terms contained therein.

In accordance with California Government Code Section 50022.6, one copy of said Los Angeles County Electrical Code will remain on file with the building official within the planning and building department and shall be at all times maintained by the building official for use and examination by the public."

SECTION 4. Chapter 9 ("Buildings"), Article 1 ("Code Adoption and Amendments), Section 9.3.1 ("Los Angeles County Code, Title 28, Plumbing Code Adopted") of the South Pasadena Municipal Code (SPMC) is amended to read as follows:

"9.3.1 2020 LOS ANGELES COUNTY CODE, TITLE 28, PLUMBING CODE ADOPTED

Los Angeles County Plumbing Code Chapter 2 through Chapter 17, and Appendices A.B, D, H, I and J, Title 28, the 2020 Los Angeles County Plumbing Code, as amended and in effect on or before January 1, 2020, adopting the 2019 California Plumbing Code, is hereby adopted by reference pursuant to the provisions of Sections 50022.1 through 50022.10 of the Government Code of the State of California as though fully set forth herein, and made a part of the South Pasadena Municipal Code with the same force and effect as though set out herein in full, including all of the regulations, revisions, conditions and terms contained.

In accordance with California Government Code Section 50022.6, one copy of said Los Angeles County Plumbing Code will remain on file with the building official within the planning and building department and shall be at all times maintained by the building official for use and examination by the public."

SECTION 5. Chapter 9 ("Buildings"), Article 1 ("Code Adoption and Amendments), Section 9.4.1 ("Los Angeles Code Code, Title 29,Mechanical CodeAdopted") of the South Pasadena Municipal Code (SPMC) is amended to read as follows:

"9.4.1 2020 LOS ANGELES COUNTY CODE, TITLE 29, MECHANICAL CODE ADOPTED

Los Angeles County Mechanical Code Chapter 2 through Chapter 17 and Appendices B, C and D, Title 29, the 2020 Los Angeles County Mechanical Code, as amended and in effect on or before January 1, 2020, adopting the 2019 California Mechanical Code, is hereby adopted by reference pursuant to the provisions of Sections 50022.1 through 50022.10 of the Government Code of the State of California as though fully set forth herein, and made a part of the South Pasadena Municipal Code with the same force and effect as though set out herein in full, including all of the regulations, revisions, conditions and terms contained therein.

In accordance with California Government Code Section 50022.6, one copy of said Los Angeles County Mechanical Code will remain on file with building official within the Planning and Building Department and shall be at all times maintained by the building official for use and examination by the public."

SECTION 6. Chapter 9 ("Buildings"), Article 1 ("Code Adoption and Amendments), Section 9.5.1 (Los Agneles County Code, Title 30, Residential Code Adopted") of the South Pasadena Municipal Code (SPMC) is amended to read as follow

"9.5.1 2020 LOS ANGELES COUNTY CODE, TITLE 30, RESIDENTIAL CODE ADOPTED

Section 1206 (Sound Transmission) of Chapter 12, Chapters 67, 69, 96, 98, 99, and appendix J of Title 26 of the Los Angeles County Building Code are adopted by reference as amended by City Building Code (9.1) and incorporated in to this Section 9.5.1 as if fully set forth below and shall be known as Section 1206 (Sound Transmission) of Chapter 12, Chapters 67, 69, 96, 98, 99, and appendix J of the City Residential Code.

Chapters 2 through 10, 44 and Appendix H of Title 30, Los Angeles County Residential Code, as amended and in effect on or before January 1, 2020, adopting the 2019 California Residential Code, is hereby adopted by reference pursuant to the provisions of Sections 50022.1 through 50022.10 of the Government Code of the State of California as though fully set forth herein, and made a part of the South Pasadena Municipal Code with the same force and effect as though set out herein in full, including all of the regulations, revisions, conditions and terms contained therein except that those certain sections thereof which are necessary to meet local conditions as hereinafter set forth in Section 9.5.2 of this Code are hereby repealed, added or amended to read as set forth therein.

In accordance with California Government Code Section 50022.6, one copy of said Los Angeles County Building Code will remain on file with the building official within the Planning and Building Department and shall be at all times maintained by the building official for use and examination by the public"

SECTION 7. Chapter 9 ("Buildings"), Article 1 ("Code Adoption and Amendments), Section 9.5.2 ("City Specific Modifications") of the South Pasadena Municipal Code (SPMC) is amended to read as follows:

"9.5.2 CITY SPECIFIC MODIFICATIONS

Chapter 3 of Title 30 of the Los Angeles County Code (the Los Angeles County Residential Code), which adopts by reference and amends California Code of Regulations Title 24, Part 2.5 (the 2019 California Residential Code) adopted by reference as the Residential Code of the City, are hereby amended, deleted or added as follows:

a. Section R313 is deleted in its entirety and replaced with section 903 of the Chapter 9 Section 903 of California Fire Code as adopted and amended by SPMC Chapter 14 Fire Prevention, Section 14.4, Fire Code Amended.

b. Section R902.2 is amended in its entirety to read:

R902.2 Roof Coverings in All Areas. Except as permitted per SPMC Chapter 14 Fire Prevention, Section 14.1.2 Special provisions related to roof types, all roof covering of every structure shall be Class A."

SECTION 8. Chapter 9 ("Buildings"), Article 1 ("Code Adoption and Amendments), Section 9.6.1 ("Los Angeles County Code, Title 33, Existing Building Code Adopted") of the South Pasadena Municipal Code (SPMC) is amended to read as follows:

"9.6.1 LOS ANGELES COUNTY CODE, TITLE 33, EXISTING BUILDING CODE ADOPTED

Los Angeles County Existing Building Code Chapter 2 through 4, 15, 16 and Appendix A, Chapter A1, A3, A4 and A5 of the Title 33, the 2020 Los Angeles County Existing Building Code, as amended and in effect on or before January 1, 2020, adopting the 2019 California Existing Building Code, is hereby adopted by reference pursuant to the provisions of Sections 50022.1 through 50022.10 of the Government Code of the State of California as though fully set forth herein, and made a part of the South Pasadena Municipal Code with the same force and effect as though set out herein in full, including all of the regulations, revisions, conditions and terms contained therein.

In accordance with California Government Code Section 50022.6, one copy of said Los Angeles County Building Code will remain on file with the building official within the Planning and Building Department and shall be at all times maintained by the building official for use and examination by the public."

SECTION 9. The adoption of the City Building Code, Electrical Code, Plumbing Code, Mechanical Code, Residential Code and Existing Building Code and the repeal, addition or amendment of ordinances by this Code shall not affect the following matters:

1. Actions and proceedings which began the effective date of this Code.

2. Prosecution for ordinance violations committed before the effective date of this Code.

3. Licenses and penalties due and unpaid at the effective date of this Code, and the collection of these licenses and penalties.

4. Bonds and cash deposits required to be posted, filed or deposited pursuant to any ordinance.

5. Matters of record which refer to or are connected with ordinances the substances of which are included in this code; these references shall be construed to apply to the corresponding provisions of the Code.

SECTION 10. The adoption of the City Building Code, Electrical Code, Plumbing Code, Mechanical Code, Residential Code and Existing Building Code and the repeal, addition or amendment of ordinances by this Code shall not affect the following matters:

1. General penalty; continuing violations. Every act prohibited or declared unlawful and every failure to perform an act required by this Code is a misdemeanor or an infraction as set forth in the said respective pertinent sections of this Code and any person causing or permitting a violation of any such section of said Code shall be subject to the penalties ascribed to each such section as set forth herein.

2. Violations including aiding, abetting, and concealing. Every person who causes, aids, abets or conceals the fact of a violation of this Code is guilty of violating this Code.

3. Enforcement by civil action. In addition to the penalties provided herein, the said Code may be enforced by civil action. Any condition existing in violation of this Code is a public nuisance and may be summarily abated by the city.

SECTION 11. The City Council hereby declares that, should any provision, section, subsection, paragraph, sentence, clause, phrase, or word of this ordinance or any part thereof, be rendered or declared invalid or unconstitutional by any final court action in a court of competent jurisdiction or by reason of any preemptive legislation, such decision or action shall not affect the validity of the remaining section or portions of the ordinance or part thereof. The City Council hereby declares that it would have independently adopted the remaining provisions, sections, subsections, paragraphes, sentences, clauses, phrases, or words of this ordinance irrespective of the fact that any one or more provisions, sections, subsections, paragraphs, sentences, clauses, phrases, or words may be declared invalid or unconstitutional.

SECTION 12. . Declaring the urgency thereof this ordinance shall take effect on January 1, 2020 , and within five (5) days after its passage the City Clerk of the City of South Pasadena shall certify to the passage and adoption of this ordinance and to its approval by the Mayor and City Council, shall cause the same to be published in a newspaper in the manner required by law, and shall cause the same to be filed with the California Building Standards Commission at 2525 Natomas Park Drive, Suite 130, Sacramento, CA 95833.

PASSED, APPROVED, AND ADOPTED this 18th day of December 2019.

_____
Robert S. Joe, Mayor

ATTEST:

_____
Evelyn G. Zneimer, City Clerk
(seal)

APPROVED AS TO FORM:

_____
Teresa L. Highsmith, City Attorney

Date: _____

I HEREBY CERTIFY the foregoing ordinance was duly adopted by the City Council of the City of South Pasadena, California, at a regular meeting held on the 18th day of December 2019, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAINED:

_____
Evelyn G. Zneimer, City Clerk
(seal)

ATTACHMENT 3

Findings and Los Angeles County Ordinance adopting and amending the 2019 California Codes and creating the 2020 Los Angeles County Codes

Due to the size of the Los Angeles County Ordinance, one copy has been filed with the City Clerk for review.

These documents can also be viewed at the following links:
Building Code http://file.lacounty.gov/SDSInter/bos/supdocs/141474.pdf
Residential Code http://file.lacounty.gov/SDSInter/bos/supdocs/141479.pdf
Electrical Code http://file.lacounty.gov/SDSInter/bos/supdocs/141477.pdf
Plumbing Code http://file.lacounty.gov/SDSInter/bos/supdocs/141637.pdf
Mechanical Code http://file.lacounty.gov/SDSInter/bos/supdocs/141478.pdf
Existing Building Code http://file.lacounty.gov/SDSInter/bos/supdocs/141481.pdf
California Codes can be viewed at https://www.dgs.ca.gov/BSC/Codes

City Council Agenda Report

ITEM NO. 14

DATE: December 18, 2019

FROM: Stephanie DeWolfe, City Manager

PREPARED BY: Joanna Hankamer, Director of Planning and Community Development
Margaret Lin, Manager of Long Range Planning and Economic Development

SUBJECT: **Adoption of an Urgency Ordinance Amending Section 36.350.200 (Residential Uses—Accessory Dwelling Units) of Division 36.350 (Standards for Specific Land Uses) of Article 3 (Site Planning and General Development Standards) of Chapter 36 (Zoning) of the South Pasadena Municipal Code Regarding Accessory Dwelling Units**

Recommendation Action

It is recommended that the City Council adopt Urgency Ordinance No. ____ amending South Pasadena Municipal Code (SPMC) Section 36.350.200 (Residential Uses—Accessory Dwelling Units) in compliance with Assembly Bill No. 68 (AB 68, Ting), Assembly Bill No. 881 (AB 881, Bloom), and Senate Bill No. 13 (SB 13, Wieckowski).

Executive Summary

Failure to comply with the new state requirements by January 1, 2020, would invalidate the existing ADU ordinance and prevent the City from having any control over the development of ADUs. Therefore, the proposed urgency ordinance brings the City's existing Accessory Dwelling Unit (ADU) ordinance into compliance with recent state legislation and maintains the existing requirements where possible.

In general, AB 68, AB 881, and SB 13 effectively reduce local control over the approval of ADUs. The legislation restricts cities' abilities to regulate key development standards for ADUs including discretionary approval. Specific local enhancements to the ADU ordinance beyond the new state regulations, including changes to the maximum ADU size and design guidelines, will be discussed with the Planning Commission in the near future to ensure adequate community input. This discussion will also be part of a comprehensive housing discussion to help guide the associated policies and strategies that will be included in the City's upcoming 2021 Housing Element Update.

Commission Review and Recommendation

On January 28, 2019, the Planning Commission discussed and provided guidance regarding proposed housing policies to improve the accessibility of affordable housing and to improve the

condition of the City's rental housing stock. These policies included amendments to the ADU ordinance, inclusionary housing, and tenant protection programs.

Discussion/Analysis

On October 9, 2019, Governor Newsom signed several bills which would collectively expand a property owner or developer's ability to build an ADU on their property and simultaneously restricts discretionary and regulatory authority over such development. The bills take effect on January 1, 2020. Existing local ordinances that fail to include or conflict with the new legislation will be considered "null and void" and are preempted by State law. Government Code Section 36937, subdivision (b), authorizes the City to adopt an ordinance as an urgency measure to protect the public peace, health or safety, if the ordinance contains a declaration of facts constituting the urgency and passed by a four-fifths vote of the City Council. Staff recommends that the Council adopt the proposed urgency ordinance to update the City's ADU standards to comply with the newly signed legislation.

The proposed urgency ordinance makes the following amendments:

- Eliminates minimum lot size requirements;
- Permits ADUs in the Residential High Density zoning district;
- Permits ADUs on parcels with multi-family residences;
- Shortens the ministerial review period;
- Limits discretionary approval of ADU applications that meet state requirements;
- Prohibits ownership or sale of ADUs separately from the primary dwelling;
- Amends height and setback requirements;
- Sets a minimum floor area for ADUs;
- Relaxes replacement parking requirements;
- Creates ADU permit termination and revocation conditions and procedures; and
- Clarifies the fees that may be charged to ADU applicants.

The following table outlines the new state requirements as they relate to the City's existing ADU requirements:

Category	Existing Requirements	State Requirements
Eligible Zones	Only properties with single-family residences within residential zones	Only properties with single-family or multi-family residences within residential or mixed use zones
Maximum ADU Size	Maximum of 1,200 square feet	Maximum of 850–1,200 square feet or 50% of the existing living area*
Minimum Lot Size	12,500 square feet or larger	Prohibits cities from imposing requirements on minimum lot size
Location on Site	Located on the same lot as a primary dwelling unit. Allowed within primary dwelling unit or in a detached ADU	No new state requirement

Category	Existing Requirements	State Requirements
Height and Setback	Shall not exceed 15 feet and one story in height (no ADUs over detached garage); Setbacks: If new ADU is attached, setback to match primary dwelling unit; if new ADU is detached, setback to equal 10% site width for side setback and 20 foot for rear setback; for conversion of existing garage to new ADU, existing garage setbacks apply	Prohibits cities from denying ADUs with 16-foot heights or 4-foot side and rear yard setbacks
Building Separation	Requires 10-foot physical separation from any other structure on the property, unless attached	No new state requirement
Interior Facility	Include living, sleeping, cooking and bathroom facilities. Limited to one bedroom	No new state requirement*
Entrance and Visibility	Separate entrance from the primary dwelling unit, entrance shall not be visible from the public right-of-way	No new state requirement
Utilities	Shall not have separate utility service	No new state requirement
Exterior Design	Consistent with the primary dwelling unit	No new state requirement
Parking	Minimum of one off-street parking space for each second dwelling unit. ADUs located within historic districts or ½ mile of transit are exempt	Prohibits cities from requiring replacement of off-street parking for the primary dwelling*
Street Address	Shall not have a separate address or unit number	No new state requirement
Rental	Cannot be rented for a period less than 30-days	No new state requirement
Owner-Occupancy	Covenant required to establish that the owner shall reside on the property of the ADU	Prohibits cities from imposing owner-occupancy requirements*
** Different requirements exist for junior accessory dwelling units*		

The proposed urgency ordinance is required incorporate the provisions of AB 68, AB 881, and SB 13 into the SPMC, thereby preserving the City's ADU ordinance and maintaining compliance with State law. The state legislation encourages the creation of ADUs within cities.

Background
On October 9, 2019, Governor Newsom signed AB 68, AB 881, and SB 13 into law. The three bills provide property owners and developers with greater flexibility to build ADUs and also restricts local jurisdictions from imposing certain requirements over such developments. The below table provides a summary of the legislation.

AB 68	AB 881	SB 13
Prohibits cities from imposing requirements on minimum lot size	Prohibits cities from imposing requirements on minimum lot size	
Prohibits cities from denying permits for ADUs with 800 square feet, 16-feet height, and 4-foot side and rear yard setbacks	Prohibits cities from denying permits for ADUs with 800 square feet, 16-feet height, and 4-foot side and rear yard setbacks	Prohibits cities from denying permits for ADUs with 800 square feet, 16-feet height, and 4-foot side and rear yard setbacks
Prohibits cities from requiring replacement off-street parking for the primary dwelling	Prohibits cities from requiring replacement off-street parking for the primary dwelling	Prohibits cities from requiring replacement off-street parking for the primary dwelling
Reduces ADU application review to 60 days	Reduces ADU application review to 60 days	Reduces ADU application review to 60 days
Allows multi-family properties to have multiple ADUs within an existing structure or up to two detached ADUs per lot	Allows multi-family properties to have multiple ADUs within an existing structure or up to two detached ADUs per lot	
	Prohibit cities from imposing owner-occupant requirements	Prohibits cities from imposing owner-occupant requirements
	Requires cities to identify designated areas for ADUs based on adequate water and sewer service; and impacts on traffic flow and safety	
		Prohibit cities from imposing impact fees on ADUs of less than 750 square feet and requires proportional impact fees for ADUs of 750 square feet or more

Legal Review
The City Attorney has reviewed this item.

Fiscal Impact
Potential Fiscal Impacts include the costs associated with code enforcement, permit applications, and impact fees associated with the development of ADUs.

Environmental Analysis
This item is exempt from any California Environmental Quality Act.

Public Notification of Agenda Item
The public was made aware that this item was to be considered this evening by virtue of its inclusion on the legally publicly noticed agenda, posting of the same agenda and reports on the City's website and/or notice in the *South Pasadena Review* and/or the *Pasadena Star-News*.

Attachment: Urgency Ordinance – Accessory Dwelling Units (redlined version)

ORDINANCE NO. _____

AN URGENCY ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SOUTH PASADENA, CALIFORNIA AMENDING SECTION 36.350.200 (RESIDENTIAL USES—ACCESSORY DWELLING UNITS) OF DIVISION 36.350 (STANDARDS FOR SPECIFIC LAND USES) OF ARTICLE 3 (SITE PLANNING AND GENERAL DEVELOPMENT STANDARDS) OF CHAPTER 36 (ZONING) OF THE SOUTH PASADENA MUNICIPAL CODE REGARDING ACCESSORY DWELLING UNITS

WHEREAS, an "accessory dwelling unit" (ADU), also known as a "second unit," is an attached or detached residential dwelling unit which provides complete independent living facilities for one or more persons; and

WHEREAS, ADUs may offer a benefit to homeowners in the form of supplementary rental income, which can help many modest income and elderly homeowners afford to remain in their homes; and

WHEREAS, ADUs may offer South Pasadena an opportunity to satisfy its regional housing needs while maintaining the community's residential character; and

WHEREAS, a housing program goal of the City's 2006-2014 Housing Element Program Performance is to "Facilitate the processing of residential second units in the City as a potential source of affordable housing"; and

WHEREAS, on October 9, 2019, Governor Newsom signed into law Senate Bill No. 13 and Assembly Bill Nos. 68 and 881; and

WHEREAS, by December 31, 2019, the City must conform Section 36.350.200 to State ADU law to avoid nullification; and

WHEREAS, Ordinance No. ___ is statutorily exempt under Section 15282, subdivision (h), of the California Environmental Quality Act ("CEQA") regulations because it adopts "an ordinance regarding second units in a single-family or multifamily residential zone by a city or county to implement the provisions of Sections 65852.1 and 65852.2 of the Government Code as set forth in Sections 21080.17 of the Public Resources Code"; and

WHEREAS, Government Code Section 36937(b) authorizes the City to adopt an ordinance as an urgency measure to protect the public peace, health or safety, containing a declaration of facts constituting the urgency and passed by a four-fifths vote of the City Council.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF SOUTH PASADENA, CALIFORNIA, DOES HEREBY ORDAIN AS FOLLOWS:

Section 1. Recitals. The recitals above are true and correct and incorporated herein by reference.

Section 2. Urgency Findings. The City Council finds, pursuant to Government Code Section 36937, that it is necessary to take immediate action to amend the City's existing Accessory Dwelling Unit Ordinance for compliance with Senate Bill No. 13 and Assembly Bill Nos. 68 and 881, which were signed into law on October 9, 2019, and to ensure orderly development and compliance with the goals of the General Plan; without immediate action, the City's Accessory Dwelling Unit Ordinance would be considered "null and void" on January 1, 2020.

Section 3. Municipal Code Amendment. Section 36.350.200 (Residential Uses—Accessory Dwelling Units) of Division 36.350 (Standards for Specific Land Uses) of Article 3 (Site Planning and General Development Standards) of Chapter 36 (Zoning) of the South Pasadena Municipal Code is hereby amended to read as follows, with additions noted by underlined text and deletions noted by ~~struck-through~~ text:

36.350.200 Residential Uses—Accessory Dwelling Units.

A. Applicability. The standards and criteria in this section apply to properties containing single-family or multi-family residences within the RE, RS, ~~and~~ RM, and RH zoning districts. These standards are in addition to all other applicable standards found in this Zoning Code.

B. Applications. Pursuant to Government Code Section 65852.2, applications for ~~second dwelling~~ accessory dwelling units shall be considered ministerially within 60 days of submission of a complete application~~, without discretionary review or a hearing~~. Accessory dwelling unit applications submitted with other entitlements may be subject to discretionary review.

C. ~~Minimum lot area. An accessory dwelling unit may be approved only on a parcel of 12,500 square feet or larger.~~ Ownership. An accessory dwelling unit may not be owned or sold separately from the primary dwelling.

D. Location on site. An accessory dwelling unit may be permanently attached to or detached from the primary dwelling on the same lot, but shall not be located above a garage.

E. Height and setback requirements. The maximum height of a detached new accessory dwelling unit shall not exceed 16 feet and shall not be greater than one story. An accessory dwelling unit shall comply with the setback requirements of the applicable zoning district (see Article 2, Zoning Districts, Allowable Land Uses, and Zone-Specific Standards), ~~and shall not exceed 15 feet and one story in height~~ except that no setback shall be required for the conversion of an existing structure, and a setback of no more than 4 feet from the side and rear lot lines shall be required for new construction or replacement structures. For purposes of this section, "conversion" means the repurposing of all or a portion of an existing structure as an accessory dwelling unit entirely within the existing structure building envelope and in

accordance with all required residential building and construction standards set forth in the applicable California Building Codes.

F. Floor area. An accessory dwelling unit attached to the primary structure shall have a maximum floor area not to exceed 50 percent of the existing living area (including a basement and attic) of the primary structure, or 1,200 square feet (whichever is less). A detached accessory dwelling unit shall not exceed a maximum of 1,200 square feet. The minimum floor area for a detached or attached accessory dwelling unit shall not be less than 150 square feet pursuant to the State Health and Safety Code for Efficiency Unitis.

G. Interior facility requirements. An accessory dwelling unit shall provide living quarters independent from the primary dwelling, including living, sleeping, cooking and restroom facilities. An ~~second~~ accessory dwelling unit shall be limited to one bedroom.

H. Entrance location and visibility. An accessory dwelling unit shall have an outdoor entrance separate from the primary dwelling. In order to maintain the single-family residential character of the street, the ~~second~~ accessory dwelling unit shall be located so that it is not visible from the public right-of-way.

I. Utilities. An accessory dwelling unit shall not have utility services (i.e., an electrical and/or gas meter) separate from the primary dwelling.

J. Exterior design. The architectural design and materials of the ~~second~~ accessory dwelling unit exterior shall be consistent with the primary dwelling~~,~~ and approved by the Director.

K. Parking. A minimum of one covered or uncovered parking space shall be required for each ~~second~~ accessory dwelling unit. No ~~second~~ accessory dwelling unit shall be allowed unless the primary dwelling is also in compliance with all applicable parking requirements of this Zoning Code. No replacement parking for the primary dwelling unit when the existing garage is converted to or demolished to make room for an accessory dwelling unit. No parking will be required for an accessory dwelling unit if:

1. The accessory dwelling unit is located within one-half mile of a bus stop or light rail station;

2. The accessory dwelling unit is within an historic district or potential historic district as identified by the National Register for Historic Places, the California Register for Historic Places, or the City's Cultural Heritage Ordinance;

3. The accessory dwelling unit is within the existing primary dwelling or existing accessory structure;

4. On-street parking permits are required but not offered to the occupant of the accessory dwelling unit; or

5. There is a car share vehicle located within one block of the accessory dwelling unit.

L. Street address. An accessory dwelling unit shall not have a separate street or unit address than the primary dwelling.

M. Short-term rentals. An accessory dwelling unit may not be rented out for a period of less than 30 days.

N. Multi-family Dwellings.

1. Not more than two detached accessory dwelling units may be located on lots with a multi-family dwelling with the following limitations: (i) the accessory dwelling units maintain four (4) foot side and rear yard setbacks and (ii) the accessory dwelling units are not more than sixteen (16) feet high.

2. Non-living space within the existing building envelope on lots with a multi-family dwelling, including storage rooms, boiler rooms, passageways, attics, basements, or garages, may be converted into accessory dwelling units if each unit complies with state building standards for dwellings and on the condition that the number of accessory dwelling units created do not exceed twenty-five (25) percent of the existing multi-family dwelling units.

O. Junior Accessory Dwelling Units.

1. All the requirements under this chapter apply equally to junior accessory dwelling units, unless stated otherwise in this section.

2. "Junior accessory dwelling unit" means a unit that is contained entirely within the walls of a proposed or existing single-family residence which provides living facilities for one or more persons. Junior accessory dwelling units are limited to one per residential lot zoned for single-family residences with a single-family residence built, or proposed to be built, on the lot.

3. The maximum floor area for a junior accessory dwelling unit shall not exceed five hundred (500) square feet.

4. No additional parking is required for a junior accessory dwelling unit.

5. All junior accessory dwelling units shall include, at a minimum, an efficiency kitchen and living area. It may include separate sanitation facilities or may share sanitation facilities with the existing structure. "Efficiency kitchen" means a cooking facility with appliances and a food preparation counter and storage cabinets that are of reasonable size in relation to the size of the junior accessory dwelling unit.

6. The owner must reside in the primary residence but may choose to reside within the remaining portion of the structure or the newly created junior accessory dwelling unit.

7. The owner must record a deed restriction and file a copy with the City. The deed restriction must include a prohibition on the sale of the junior accessory dwelling unit separate from the sale of the primary residence, including a statement that the deed restriction may be enforced against future purchasers, and a restriction on the size and attributes of the junior accessory dwelling unit that conforms to this chapter.

P. ~~Owner-occupancy required. The owner of the property shall reside on the property, and a covenant establishing this requirement shall be recorded prior to a final building inspection for the second dwelling unit.~~ Certificate of occupancy. A certificate of occupancy for an accessory dwelling unit shall not be issued before the issuance of a certificate of occupancy for the primary dwelling.

Q. Permit Termination. An accessory dwelling unit permit validly issued pursuant to this section shall terminate when any one or more of the following occur:

1. The permit is not used within 180 days from the date of permit's issuance;

2. The permit has been abandoned or discontinued for 180 consecutive days;

3. The accessory dwelling unit owner files a declaration with the Director of Planning and Community Development that the permit has been abandoned or discontinued and the accessory dwelling unit has been removed from the property;

4. The permit has expired by its terms; or

5. The permit has been revoked as provided in this section.

R. Permit Revocation. In the event an accessory dwelling unit permit was obtained by fraud or misrepresentation, or a permitted accessory dwelling unit dwelling is used, operated, or maintained in violation of this chapter or applicable state or federal law, or the accessory dwelling unit has been used or is being used in a manner so as to constitute a public nuisance, the Director of Planning and Community Development, on not less than 10 days written notice to the accessory dwelling unit owner, may hold a permit revocation hearing which shall be heard by a hearing officer in accordance with applicable law. The Director and the accessory dwelling unit owner shall each be permitted to present evidence with respect to the proposed permit revocation. The hearing officer shall issue a written decision within 10 days of the conclusion of the hearing. The decision of the hearing officer shall be final. Upon revocation, the accessory dwelling unit shall be removed. However, if at the time of revocation there are tenants occupying the accessory dwelling unit pursuant to a valid and binding rental or lease agreement that is consistent with the provisions of this chapter, such tenants shall be permitted to continue to occupy the accessory dwelling unit until the expiration or earlier termination of the rental or lease agreement, and upon such expiration or earlier termination the accessory dwelling unit shall be removed. Nothing herein shall preclude or prevent the city from undertaking any other enforcement action with respect to the accessory dwelling unit which the city is otherwise authorized under this code or applicable state or federal law, including but not limited to the abatement of public nuisances.

S. ~~Appeals. The decision of the Director is final and is not appealable.~~Fees.

1. An accessory dwelling unit application must be submitted to the city along with the appropriate fee as established by the city council by resolution in accordance with applicable law.

2. The City may impose a fee on the applicant in connection with approval of an accessory dwelling unit for the purpose of defraying all or a portion of the cost of

public facilities related to its development, as provided for in Government Code sections 65852.2(f)(1) and 66000(b).

3. The City will not consider an accessory dwelling unit to be a new residential use for purposes of calculating connection fees or capacity charges for utilities, including water and sewer service, unless the accessory dwelling unit was constructed with a new single-family dwelling.

4. The City shall not impose any impact fee upon the development of an accessory dwelling unit less than 750 square feet. Any impact fees charged for an accessory dwelling unit of 750 square feet or more shall be charged proportionately in relation to the square footage of the primary dwelling unit.

Section 4. CEQA. The City Council has considered all of the evidence in the record, including the staff reports, the testimony received during the public hearing on the matter held by the City Council, and hereby determines that Ordinance No. ___ is statutorily exempt under Section 15282, Subdivision (h), of the California Environmental Quality Act ("CEQA") regulations because it adopts "an ordinance regarding accessory dwelling units in a single-family or multifamily residential zone by a city or county to implement the provisions of Sections 65852.1 and 65852.2 of the Government Code as set forth in Sections 21080.17 of the Public Resources Code."

Section 5. Severability. If any section, subsection, sentence, clause, or phrase of this ordinance is for any reason held by a court of competent jurisdiction to be invalid, or otherwise not in force or effect, such decision shall not affect the validity, force, or effect, of the remaining portions of this ordinance. The City Council declares that it would have adopted this ordinance and each section, subsection, sentence, clause, and phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, or phrases be declared invalid or otherwise not in force or effect.

Section 6. Recording. The City Clerk shall submit a copy of this Urgency Ordinance to the California Department of Housing and Community Development within 60 days of its adoption pursuant to Government Code section 65852.2, subdivision (h).

Section 7. Immediate Effect. This Urgency Ordinance is adopted by 4/5 vote of the City Council and shall take effect immediately pursuant to Government Code section 36937.

Section 8. Certification. The City Clerk shall cause this Urgency Ordinance to be published in accordance with California Government Code Section 36933, shall certify to the adoption of this Urgency Ordinance, and shall cause this Urgency Ordinance and its certification, together with proof of publication, to be entered in the Book of Ordinances of the City Council. The City Clerk shall certify to the adoption of this ordinance and shall cause the same to be published or posted in the manner prescribed by law.

PASSED, APPROVED, and ADOPTED on this 18th day of December, 2019.

_____
Robert S. Joe, Mayor

ATTEST:

_____
Maria A. Ayala, City Clerk

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) SS:
CITY OF SOUTH PASADENA)

I, Maria A. Ayala, City Clerk of the City of South Pasadena, hereby certify that the foregoing Ordinance No. ____ was approved and adopted by said Council at its regular meeting held on the 18th day of December, 2019 by the following vote, to-wit:

AYES:
NOES:
ABSTAIN:
ABSENT:

_____
Maria A. Ayala, City Clerk

City Council Agenda Report

ITEM NO. 15

DATE: December 18, 2019

FROM: Stephanie DeWolfe, City Manager

PREPARED BY: Shahid Abbas, Director of Public Works
Julian Lee, Deputy Director of Public Works

SUBJECT: **Award of Contract for the Preparation of Integrated Water and Wastewater Resources Management Plan to Carollo Engineers, Inc. for a Total Not-to-Exceed Amount of $579,395 for a Period of Two Years**

Recommendation

It is recommended that the City Council:

1. Accept a proposal dated September 30, 2019 from Carollo Engineers, Inc. (Carollo) for the preparation of Integrated Water and Wastewater Resources Management Plan; and
2. Authorize the City Manager to execute the agreements and any amendments with Carollo for a not-to-exceed amount of $579,395 ($526,723 for the proposal amount and $52,672 for 10% contingency); and
3. Reject all other proposals received.

Discussion/Analysis

The City of South Pasadena's (City's) Integrated Water and Wastewater Resources Management Plan (Integrated Water and Wastewater Plan) will evaluate the City's various water resources and will identify short and long-term water and sewer management and operation strategies to meet the existing and future demand and associated infrastructure needs.

The Integrated Water and Wastewater Plan is comprised of two parts: water and sewer. While the City already has the Sewer System Management Plan (SSMP), the SSMP requires a comprehensive update after recent significant sewer system upgrade. This is the first time the City will combine several utilities plans into one master plan that will identify strategies and goals for next 50 years.

The completed Integrated Water and Wastewater Plan also include following:

- Detailed condition assessment of existing water and sewer infrastructures.
- Identify demand, capacity, and infrastructure needs for next 50 years.
- Operational and Maintenance (O&M) planning for water, sewer and stormwater systems.
- 10-year Capital Improvement Project (CIP) programs for the City's utility systems.
- Feasibility of potential recycled water system in the City.
- Potential stormwater projects within the City and in the region.
- Financial planning including possible funding sources for the both O&M and CIP programs.

On September 30, 2019 the proposals were received from two engineering firms: Carollo Engineers, Inc. and Dudek. Two firms were interviewed by the evaluation panel on October 10, 2019. Based on the review of the proposals and the interview conducted, Carollo provided the most optimal plan and interview presentation with qualified technical knowledge, relevant team experiences, and in-depth understanding of the scope of work and project requirements.

Background
The City is a full-service city, with several existing utilities services including potable water, sewer collection, and stormwater drainage systems. Currently, the City does not have recycled water system but its feasibility will be evaluated as part of the Integrated Water and Wastewater Plan should the recycle water becomes available to the City. Details of existing utilities are given below:

- The City's water distribution system consists of approximately 79 miles of transmission and distribution water pipelines. The water system comprises four groundwater wells, five storage reservoirs, 2 elevated tanks, and six booster pumping stations, which provide water service to approximately 6,200 connections in five pressure zones. The City has historically used approximately 4,400 Acre Feet of water per year; however, due to recent water conservation effort, the City now pumps approximately 3,500 Acre Feet per Year.

- The City's sewer collection system consists of approximately 58 miles of sewer pipe lines. Of the pipe lines, nearly 90% are 8-inch diameter Vitrified Clay Pipe (VCP), and the remaining are Polyvinyl Chloride (PVC) pipes of various sizes. The City has three sewer lift stations at the Arroyo South Park, at the Mission Meridian Parking Garage, and at the Arroyo Seco Golf Course.

- The City's existing stormwater drainage system is maintained by both the City and the Los Angeles County Flood Control District (LACFCD). Rainfalls, urban runoffs, and surface flow from upstream areas, are generally collected and conveyed through a network of streets, catch basins and drainage pipes, ultimately making their way to the various Receiving Water Bodies (RWB).

- The City does not have any recycled water system, whereas Upper San Gabriel Municipal Water District (USGMWD) is the recycled water wholesaler in the area and is proceeding with its Indirect Reuse Replenishment Project (IRRP), which continues to expand its recycled water system for direct non-potable use as well as for supplemental groundwater recharge. Upon completion, direct recycled water use will be available to certain areas in the San Gabriel Valley. The timeline of the recycled water availability to the City is still uncertain.

Legal Review
The City Attorney has reviewed this item.

Fiscal Impact
The Fiscal Year (FY) 2019-20 Budget adopted by the City Council includes funding for the preparation of IWWMP in Water CIP (500-9000-9000-9000) and Sewer CIP (210-9000-9000-9000) Accounts.

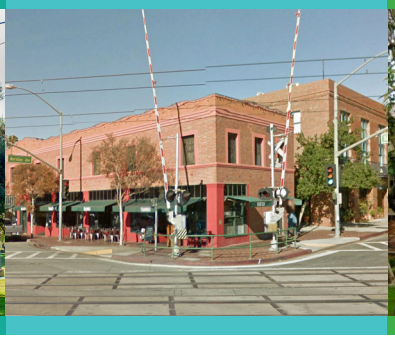
Public Notification of Agenda Item
The public was made aware that this item was to be considered this evening by virtue of its inclusion on the legally publicly noticed agenda, posting of the same agenda and reports on the City's website and/or notice in the *South Pasadena Review* and/or the *Pasadena Star-News*.

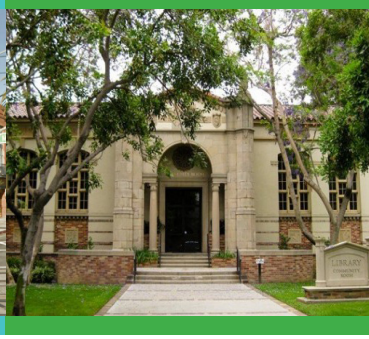
Attachments:
- Attachment 1 – Proposal from Carollo Engineers, Inc.
- Attachment 2 – Professional Service Agreement with Carollo Engineers, Inc.
- Exhibit A to Attachment 2 – Scope of Work
- Exhibit B to Attachment 2 – Fee Schedule from Carollo Engineers, Inc.

ATTACHMENT 1

Proposal from Carollo Engineers, Inc.

CITY OF
SOUTH
PASADENA





PROPOSAL FOR THE PREPARATION OF

INTEGRATED WATER AND WASTEWATER RESOURCES MANAGEMENT PLAN (IWWRMP)

RFP #201908-02 | SEPTEMBER 2019

carollo

Engineers...Working Wonders With Water®

15-5

carollo
Engineers...Working Wonders With Water®

707 Wilshire Boulevard, Suite 3920, Los Angeles, California 90017
P. 213.489.1587 F. 213.572.0361

September 30, 2019

Julian Lee, Deputy Public Works Director
City of South Pasadena
Public Works Department
1414 Mission Street
South Pasadena, CA 91030

Subject: Proposal for Preparation of an Integrated Water and Wastewater Resources Management Plan

Dear Mr. Lee:

This Integrated Water and Wastewater Resources Master Plan (IWWRMP) will provide strategic guidance and justification for future system improvements for the City of South Pasadena (City). As demonstrated in our proposal, Carollo d has compiled a team that is a direct match with your project needs. We are available to be dedicated to your IWWRMP and bring the following benefits to South Pasadena:

The Right Balance of Local Knowledge and a Fresh Perspective. Our team brings in-depth knowledge of the City's water system from the hydraulic modeling work that some of our team members have worked on since 2012, as well as the regional opportunities from our work with neighboring agencies. As a matter of fact, our proposed project manager, Inge Wiersema, is a long-time resident of South Pasadena and is intimately familiar with the City's entire service area. However, it is also important to bring a set of fresh eyes to the table as this triggers the necessary questions to deliver comprehensive plan. Carollo is the team that delivers this balance!

Integrated "One Water" Planning Approach to Deliver a Holistic Roadmap for the Future. Carollo's team brings unmatched experience in integrated master planning and has established a national reputation as the One Water leader in the water sector. This experience results in a more efficient development of your IWWRMP because we understand the benefits and critical coordination points between the water, recycled water, wastewater, and stormwater planning elements. The end result is a consistent and sound plan that provides a holistic roadmap for both near- and long-term system improvements that can be justified to City Council for implementation.

Dedicated Team from Start to Finish! Carollo brings the breadth and depth of resources to deliver master planning projects with a master planning group of more than 50 professionals. Our team has been assembled based on relevant past experience for the City and pertinent regional agencies to minimize learning curve and hit the ground running. Having just completed three large master planning projects, our team is available to be dedicated to your IWWRMP from start to finish and deliver the Final Plan by November 2020.

We look forward to working with City staff to develop the IWWRMP that will be used to make important decisions for all water-related services. We want to thank you for the opportunity to submit our proposal and look forward to continuing our working relationship with the City. If you have any questions about this proposal, please contact Inge Wiersema at 626-393-7427 or IWiersema@carollo.com.

Sincerely,

CAROLLO ENGINEERS, INC.

Gil F. Crozes, PhD
Senior Vice President/Principal-in-Charge

Inge Wiersema, PE
Vice President/Project Manager

Enclosures: 5 hard copy proposals
1 electronic copy

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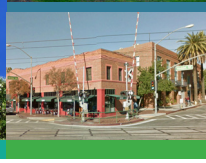
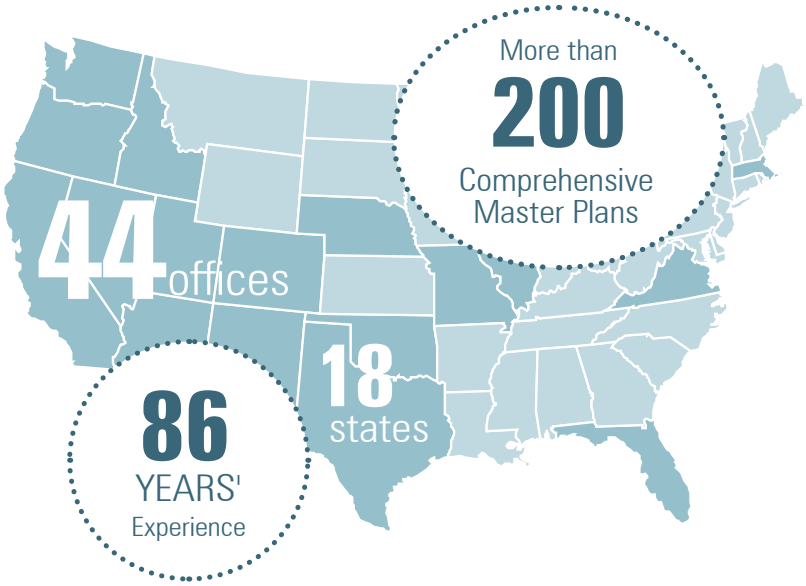
Background



FIRM OVERVIEW

Carollo Engineers, Inc. (Carollo) is a full-service, environmental engineering firm that has been exclusively providing water and wastewater services across the United States for 86 years. Unlike our competitors, we only provide water-related engineering services. In fact, with a staff of more than 1,000 professionals located in 45 offices across the nation, we are the largest firm in the country that is 100 percent focused on water-engineering solutions. Our exclusive focus on water attracts water industry leaders who have a passion for water and the expertise required to solve our most pressing water challenges.



Capabilities and Planning Expertise

Carollo is an industry leader in the development of award-winning, comprehensive master plans for water and wastewater agencies facing a variety of complex issues. Master planning efforts have been an integral aspect of Carollo's experience throughout the company's history. In the past 15 years alone, we have provided planning services for more than 500 municipal clients with service area populations ranging from 5,000 to more than four million. This includes more than 100 wastewater treatment facilities, more than 100 water treatment facilities, more than 100 recycled water facilities, and extensive water distribution and wastewater collection systems.

We have also assisted many of our clients with subsequent rate studies and prepared presentations/attended many city council and board meetings to assist with the stakeholder outreach, public acceptance, and adoption process of the master plans.

Our professionals provide cost-effective solutions that utilize existing facilities to the greatest possible extent, and limit treatment alternatives and capital expenditures to the most reliable and easy to implement options.

WHY CAROLLO?

A Proven Team with a Long History of successful integrated master planning projects throughout California and the United States.

A Partner-Focused, Facilitated Approach that brings everyone to the table and balances the many needs of the City to provide optimized solutions.

Integrated Master Planning Experts with a broad range of technical know-how related to all facets of the project.

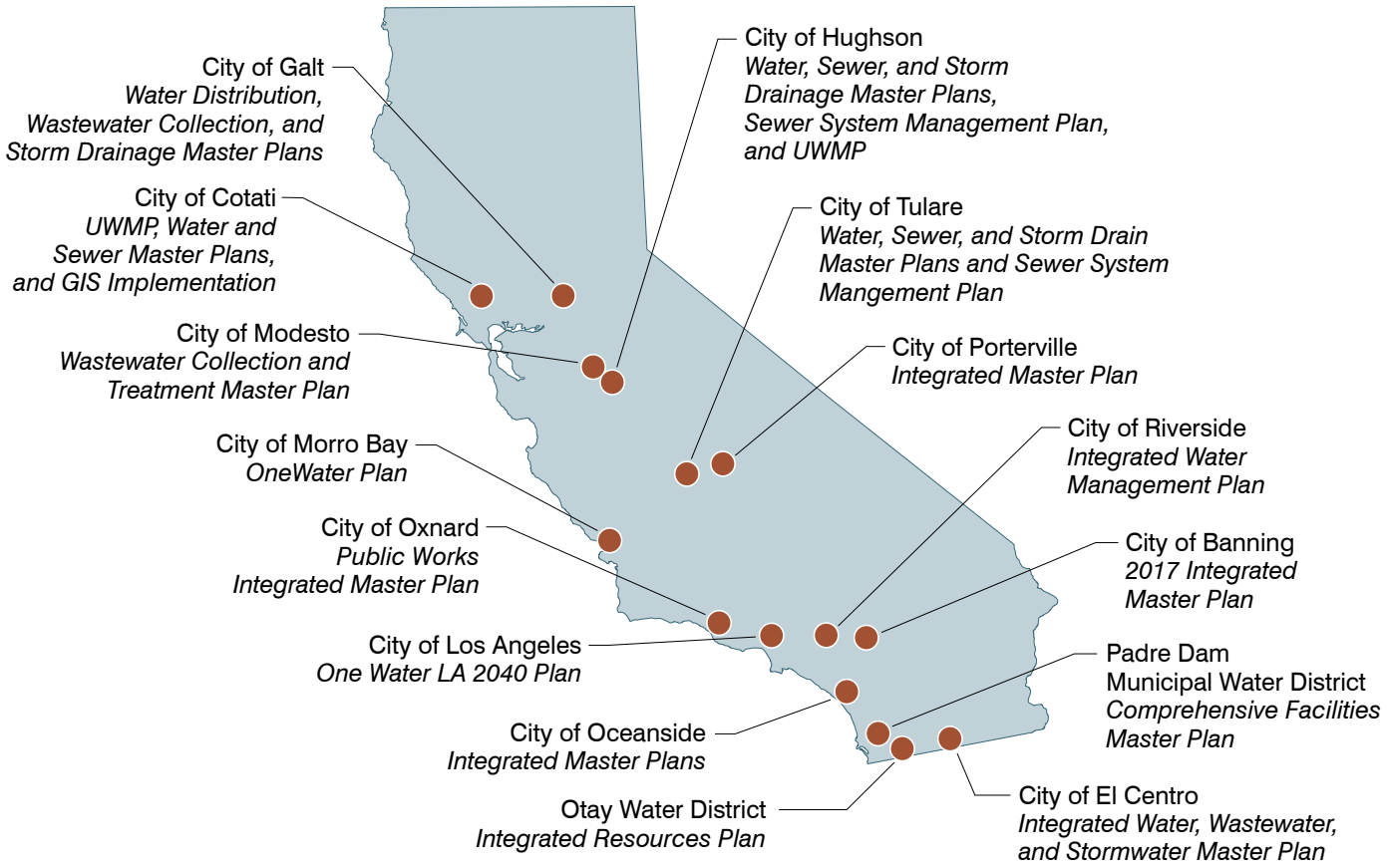
Unbiased Decision Process that leads to optimized solutions and defensible recommendations.

Integrated "One Water" Planning Experience is What Sets Carollo Apart

Other firms can claim they have infrastructure planning experience, but Carollo has established itself as a leader in the development of integrated and comprehensive One Water master plans for cities and agencies facing a variety of complex issues. Carollo's experience with integrated plans is what sets us apart from the rest.

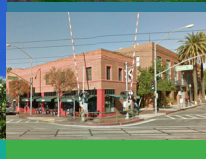
More importantly, our project team has completed multiple integrated water, wastewater, recycled water, and stormwater master plans for many agencies in California. This integrated One Water planning experience allows us to deliver a high-quality integrated master plan in an efficient manner. Our integrated planning approach results in sound planning documents.

Through our experience we know exactly which tasks need to be closely coordinated to avoid redo work, stay on schedule, and obtain consistent master plans that the City can implement with confidence. Correlating project phasing and even pipeline alignments between the recommended potable, sewer, and stormwater projects is imperative to avoiding unnecessary construction burdens and saving costs for the City.



Carollo specializes in integrated One Water planning studies. In the last 10 years, we have completed more than 15 integrated plans in California alone, and have helped cities and municipalities just like yours prioritize projects and develop capital plans.

Firm Experience & References

SIMILAR EXPERIENCE

Carollo has established itself as a leader in the development of comprehensive and integrated utility master plans for cities and agencies facing a variety of complex issues. Our project team has completed multiple integrated water, wastewater, recycled water, and stormwater master plans for many agencies in California. This integrated planning experience allows us to deliver a high-quality comprehensive master plan in an efficient manner.

We have provided a list of projects completed in the past five years in the table below to further demonstrate our overall experience with projects similar to your IWWRMP. We have also provided client references as requested in the RFP. Detailed descriptions of select projects are provided in the References section.

Relevant Projects in the Last 5 Years

Client and Project Name	Reference	Water	Sewer	Recycled Water	Stormwater
Padre Dam Municipal Water District, CA | Comprehensive Master Plan	Mark Niemiec	■	■	■	
City of Oceanside, CA | Integrated Water, Recycled Water, and Wastewater Master Plan	Cari Dale	■	■	■	
Orange County Sanitation District, CA | Stormwater Master Plan (PS16-01)	Ted Vitko			■	■
City of Riverside, CA | Comprehensive Wastewater Master Plan	Ernest Marquez		■		
Inland Empire Utilities Agency, CA | Integrated Wastewater Facilities Master Plan	Chris Berch		■		
Eastern Municipal Water District, CA | 2015 RWRF Master Plan Update	Erik Jorgensen		■		
Central Contra Costa Water District, CA | Integrated Master Plan	Dan Frost		■	■	
City of Modesto, CA | Wastewater Collection System and Treatment Master Plan Update	William Wong		■		
City of Banning, CA | Integrated Master Plan	Arturo Vela	■	■	■	
City of Los Angeles, CA | One Water 2040 Plan	Ali Poosti	■	■	■	■
City of Oxnard, CA | Public Works Integrated Master Plan	Thien Ng	■	■	■	■
City of Porterville, CA | Integrated Master Plan	Mike Reed	■	■		■
City of Morro Bay, CA | OneWater Morro Bay Integrated Master Plan	Rob Livick	■	■		■
City of Glendale, CA | Water and Recycled Water Master Plan	Raja Takidin	■		■	
City of Pasadena, CA | Hydraulic Model Calibration	Brad Boman	■			
City of Colton, CA | Water and Wastewater System Master Plan and Condition Assessment	Mike Corey	■	■		
Otay Water District, CA | Integrated Resources Plan	Steve Beppler	■	■	■	■
City of Riverside, CA | Integrated Water Management Plan	Michael Plinski	■		■	■
San Gabriel Valley Water Company, LA County Division, CA | Water Master Plan	Kris Olson	■			
UC Irvine, CA | Campus-Wide Water and Recycled Water Master Plan	Fred Bockmiller	■		■	

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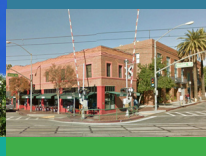
Staff Experience



THE RIGHT TEAM FOR SOUTH PASADENA

We have combined Carollo's local and national resources to assemble the right team of individuals with specialized expertise in water, wastewater, stormwater, and financial assistance. Our team will provide you with a technically sound, comprehensive, and fundable set of plans to guide future expenditures and deliver multiple benefits for every project.

Led by project manager Inge Wiersema, Carollo has assembled a project delivery team of specialists based on a simple but powerful principle—put the most qualified people in the roles essential to meeting project goals. Inge brings effective and proactive project management skills, a focus on client services, and extensive relevant experience managing projects of similar complexity and scope.

Our project organization is shown in the organizational chart below. On the following pages we summarize our team's qualifications and experience. Resumes are provided at the end of this section.

Preparation of Integrated Water and Wastewater Resources Management Plan (IWWRMP) - RFP #201908-02

CITY OF PASADENA PROJECT MANAGER
Julian Lee

QA/QC
Tim Loper, PE
Lara Kammereck

Principal-in-Charge
Gil Crozes, PhD

Project Manager
Inge Wiersema, PE

Project Engineer
Matt Huang, PE

Potable Water Master Plan Lead - Ryan Hejka
Recycled Water Master Plan Lead - Aimee Zhao
Sewer System Master Plan and SSMP Lead - Ryan Orgill, PE
Stormwater System Master Plan Lead - Bronwyn Kelly, PG
Master Planning Support - Laura Southworth
GIS - Jackie Silber, GISP
Funding Options - Kyle Rhorer
Infrastructure Replacement Plan - David Baranowski, PE
Flow Monitoring - V&A Consulting Engineers
Water Main Risk Assessment *(Optional)* - Fracta

PROVEN PROJECT MANAGEMENT

We bring a project management team consisting of senior leadership you can trust. Inge has extensive experience coordinating all elements of the project required for a technically sound integrated master plan and complying with the goals established for the project. Additionally, our team has worked together on many similar projects in the past and recently finished two large master planning projects. For you, this means a team of experts that works very well together, which results in efficient project execution and ability to conduct more in-depth analysis and deliver better quality deliverables in less time.

Inge Wiersema, PE | Project Manager

Inge is an environmental engineer with 24 years of experience. She is a vice president with Carollo and serves as the company's national One Water Director and Water Resources Practice Lead. Inge is specialized in strategic utility master planning and water resources projects and has been involved in more than 150 master planning and hydraulic modeling projects for water, recycled water, wastewater, and stormwater systems in Southern California. She also brings experience with stakeholder engagement, groundwater management plans, watershed management plans, urban water management plans, and water supply studies. Inge will be your primary point of contact throughout the project and brings a proven track record of completing the projects on schedule and within budget.

Matt Huang, PE | Project Engineer

Matt has significant experience with water resources planning throughout California. With 19 years of experience, he has been involved in numerous water and recycled water hydraulic modeling and master planning, but also has a broad base of experience, also working in water quality, water and wastewater treatment, water and sewer infrastructure, water resources, and wastewater system modeling and master planning, with experience in planning, design and construction. His experience encompasses many large planning and design projects, with projects in twelve states and seven foreign countries. In addition, Matt has worked with Inge on more than 20 master planning projects.

Team Member	Master Plans and Hydraulic Modeling Studies
Inge Wiersema	152
Matt Huang	112
Tim Loper	91
Lara Kammereck	73
Ryan Hejka	22
Ryan Orgill	82
Aimee Zhao	16
Laura Southworth	5
David Baranowski	33
Jackie Silber	42
TOTAL	628

Our team of experts has collectively worked on more than 625 master plans, water resources studies, and hydraulic models.

Gil Crozes, PhD | Principal-in-Charge

Gil is a senior vice president at Carollo with 29 years of experience specializing in water quality, water and wastewater facilities planning, treatment processes, studies, and treatment plant design. He brings a decade-long tenure supporting complex projects such as work on One Water LA. His areas of focus include groundwater treatment, surface water treatment, and wastewater treatment, as well as reuse of wastewater for irrigation and groundwater recharge.

Tim Loper, PE | QA/QC

Tim is Carollo's Infrastructure Master Planning Services Lead and has been working for the past 18 years exclusively on master planning, modeling, and asset management projects. Tim has served as project manager and/or project engineer for more than 50 water, wastewater, stormwater and/or recycled water master plans and modeling projects, with a focus on helping agencies develop capital improvement programs that help prioritize rehabilitation and replacement projects, as well as integrate capital with inspection and funding prioritization. Tim brings a pair of fresh eyes to the work we deliver to you as he is not involved in any of the project tasks. He will conduct technical reviews at all critical milestones according to Carollo's Best Management Practices.

Lara Kammereck | QA/QC

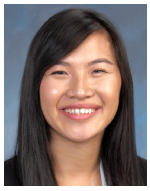
Lara is a municipal water system planning specialist with more than 25 years of experience in the field. She brings her in-depth utilities planning experience and leadership to meet the client's goals and objectives. Lara understands how to deliver technically sound planning documents for agencies, policy makers, and stakeholders. She brings a unique perspective with a resume of both her current consulting experience and municipal experience when she served as a water utility engineer for a city. She has provided leadership and quality management reviews for the successful development of numerous water system plans.

TECHNICAL SUPPORT

Strong technical support for this effort will be provided by the following discipline experts.

Ryan Hejka | Potable Water Master Plan Lead

Ryan is a civil engineer with six years of professional experience. He is specialized in water and recycled water system hydraulic modeling and master planning projects and is skilled in the use of a wide variety of hydraulic modeling packages including InfoWater, H2OMAP, Mike Urban, and Water GEMs. In addition, Ryan has extensive experience with ArcGIS and proficient in multiple programming languages that he utilized to build several customized water optimization models and tools for water agencies.



Aimee Zhao | Recycled Water Master Plan Lead

Aimee is an environmental engineer with four years of experience in master planning, hydraulic modeling, ArcGIS, capital improvement program development, and water resources studies. She also has extensive modeling experience with InfoWater and H2OMAP Water. Her experience in the water resource environment has provided her with a myriad of duties that have helped her hone her role as a proficient environmental engineer. Aimee also has excellent communication and writing skills to deliver user-friendly master plan reports and other studies.

Ryan Orgill, PE | Sewer System Master Plan and SSMP Lead

Ryan brings 15 years of experience dedicated specifically to infrastructure master planning projects. His expertise includes hydraulic modeling (water, sewer, and recycled water) in various software platforms, master planning, and geographic information systems (GIS). Ryan specializes in creating and calibrating hydraulic models, development of analysis criteria, evaluation of existing water systems, and the development of improvement projects to mitigate existing deficiencies and to serve future growth. He has worked on infrastructure master planning and hydraulic modeling projects for clients throughout the western United States, including California, Oregon, Washington, Nevada, Arizona, and Texas. In addition, Ryan has worked with both Inge Wiersema and Tim Loper on more than 20 master planning projects.

Bronwyn Kelly, PG | Stormwater System Master Plan Lead

Bronwyn has 18 years of experience on a wide range of water resources and stormwater monitoring projects. She has led projects ranging from small planning studies to multimillion dollar programs serving major metropolitan areas. service as the program manager for the Safe, Clean Water Program development with the City of Los Angeles, Bureau of Sanitation, and Project Manager and lead for multi-ple Enhanced Watershed Management Program (EWMP)/WMP development and CIMP implementation in urban runoff and stormwater quality monitoring programs, including the City of Los Angeles, the County of Los Angeles and Los Angeles County Flood Control District. Bronwyn also supported the City of San Diego's Storm Water Divisions, Water Quality Improvement Plans (WQIPs) Implementation for San Diego Watersheds.

Laura Southworth | Master Planning Support

Laura is an environmental engineer, joined Carollo in 2017 after receiving a Master of Science degree in Environmental Engineering from the University of Illinois at Urbana-Champaign. She has experience on a variety of projects for water and wastewater, including the City of Torrance Desalter Hydraulic Modeling project, San Gabriel Valley Water Company's Water System Master Plan Update, and development of the extensive hydraulic models for both the Los Angeles County Division and the Fontana Water Company Division. Laura has excellent analytical and writing skills and will assist the team with data analysis for demand forecasting, water supply, storage and pumping analysis.

Jackie Silber, GISP | GIS

Jackie is a GIS lead with more than 18 years of professional experience in GIS and technical training. Her experience includes GIS support for water resource planning, environmental remediation sampling, and demographic forecasting projects. Her GIS skills focus on geodatabase design and optimization, manipulation and conversion of projections, CAD and KML to GIS conversion, spatial analysis, automation of repetitive analysis using Model Builder and Python, and creation of cartographic figures. Jackie has worked with Inge and her team on numerous master plans by preparing GIS maps as well as sophisticated GIS analysis to support land use based water demand forecasting, model development, and spatial water system analysis.

Kyle Rhorer | Funding Options

Kyle has 27 years of experience managing and delivering management consulting services to publicly and privately owned drinking water, wastewater, and solid waste utilities, as well as regulatory agencies and other environmental service providers. He is also experienced in the areas of strategic planning, capital financing, and financial management.

David Baranowski, PE | Infrastructure Replacement Plan

David has 10 years of experience as an asset management analyst with extensive knowledge and experience in asset management processes and practices, as well as experience in the design of water and wastewater infrastructure. His asset management experience includes asset inventory and site assessment, asset register and hierarchy creation, risk analysis, asset useful lives and renewal modeling, and development of asset management plans.

SIMILAR EXPERIENCE OF OUR PROJECT MANAGER AND PROJECT ENGINEER

As requested in the RFP, the tables below contain a list of similar projects and clients our project manager and project engineer have completed in the past 5 years.

INGE WIERSEMA, Project Manager: Similar Projects Completed in the Last 5 Years

Project & Client Name	Year Completed
Fontana Water Company Division, San Gabriel Valley Water Company, CA | Water System Master Plan	2019
Los Angeles County Division, San Gabriel Valley Water Company, CA | Water System Master Plan	2019
East Orange County Water District, CA | Water Master Plan	2019
City of Morro Bay, CA | OneWater Morro Bay Integrated Master Plan	2018
City of Banning, CA | 2017 Integrated Master Plan	2018
UC Irvine, CA | Campus-Wide Water and Recycled Water Master Plan	2018
City of Los Angeles, CA | One Water LA 2040 Plan	2018
City of Pasadena, CA | Hydraulic Model Calibration	2017
City of Oxnard, CA | Public Works Integrated Master Plan	2017
City of Upland, CA | Hydraulic Model Reliability Study	2017
Molton Niguel Water District, CA | Recycled Water Master Plan	2017
Cucamonga Valley Water District, CA | Water System Master Plan	2017
City of Glendale, CA | Water and Recycled Water Master Plan & Hydraulic Model Development	2016
City of Oceanside, CA | Integrated Master Plan	2016
City of Colton, CA | Water and Wastewater Master Plan	2016
Otay Water District, CA | 2015 Integrated Resources Plan Update	2015
City of Riverside, CA | Integrated Water Management Plan	2015
City of Torrance, CA | Stormwater Quality Master Plan	2015
Padre Dam Municipal Water District, CA | Comprehensive Facilities Master Plan	2014
Mesa Water District, CA | Mesa Water System Master Plan Update	2014

MATT HUANG, Project Engineer: Similar Projects Completed in the Last 5 Years

Project & Client Name	Year Completed
Fontana Water Company Division, San Gabriel Valley Water Company, CA | Water System Master Plan	2019
Los Angeles County Division, San Gabriel Valley Water Company, CA | Water System Master Plan	2019
Long Beach Water Department, CA | West Long Beach Advanced Treated Water Feasibility Study	2019
City of Vacaville, CA | Recycled Water Feasibility Study	2019
Inland Empire Utilities Agency, CA | On-Call Recycled Water Modeling	2019
City of Glendale, CA | Hydraulic Model Calibration	2018
City of Morro Bay, CA | OneWater Morro Bay Integrated Master Plan	2018
City of Banning, CA | 2017 Integrated Master Plan	2018
City of Los Angeles, CA | One Water LA 2040 Plan	2018
City of Torrance, CA | High Zone Water Evaluation	2018
Mesa Water District, CA | Chlorine Conversion Study	2018
Marin Municipal Water District, CA | Pine Mountain Tunnel Replacement Evaluation	2018
Mesa Water District, CA | Nitrification Study	2017
City of Pasadena, CA | Hydraulic Model Calibration	2017
Cucamonga Valley Water District, CA | Water System Master Plan	2017
Cucamonga Valley Water District, CA | Water System Master Plan	2017
Elsinore Valley Municipal Water District, CA | Western/Murietta Transfer Study	2017
Elsinore Valley Municipal Water District, CA | San Bernardino Well Asset Transfer Study	2017
Central Contra Costa Sanitary District, CA | Collection System Master Plan	2016
City of Colton, CA | Water and Wastewater Master Plan	2016
Palmdale Water District, CA | Groundwater Well CT Study	2016

WHAT SETS CAROLLO'S TEAM APART?

Four key reasons the Carollo team is right for South Pasadena:

1. **Experience working together –** Carollo's planning team have collaborated on many projects within the last 10 years. Our project experience speaks for itself. This translates to work efficiences and cost savings.
2. **Dedicated task leads tailored to meet your needs –** Our water, sewer, storm, and recycled water task leads are hand picked to address the specific challenges you face. Their combined skill sets will deliver the integrated plans in accordance with the City's vision.
3. **A deep bench of unique technical talent –** We offer an experienced team of experts in infrastructure master planning; water, recycled water, wastewater, and stormwater treatment, as well as permitting and outreach to address your needs.
4. **Knowledge of local conditions –** Carollo's project manager, Inge Wiersema, is a long-time resident of South Pasadena and has worked with the City since 2012. She brings in-depth knowledge of local conditions to efficiently guide the project work and meet frequently and on short notice to facilitate excellent project communications from start to finish!

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Education

MSc Environmental Engineering, Agricultural University, Wageningen, Netherlands, 1997

BS Environmental Engineering, Hogeschool Van Utrecht, Netherlands, 1995

Licenses

Civil Engineer, California

Professional Affiliations

American Water Works Association

Association of Women in Water, Energy, and Environment

Water Environment Federation

WateReuse Association (Technical Chair of Los Angeles Chapter)

Inge Wiersema, P.E.

Inge Wiersema is an environmental engineer with 24 years of experience and is specialized in strategic water resources planning, including One Water approaches, as well as traditional utility master planning and hydraulic modeling. Her experience includes potable water, wastewater, recycled water, stormwater, and integrated planning projects. She has also worked on various groundwater, watershed, and urban water management plans, as well as a few sewer system management plans.

She also brings experience with stakeholder engagement with a broad range of audiences, ranging from the general public to executive management and political leadership. Ms. Wiersema is a Vice President and serves as Carollo's national One Water Director and Water Resources Practice Lead.

Relevant Integrated and One Water Planning Experience

→ Project manager for the One Water LA 2040 Plan for the City of Los Angeles, California. The Plan is a collaborative effort of the LA Sanitation (LASAN) and LA Department of Water and Power (LADWP) that takes a holistic approach to consider all types of water as "One Water." The Plan was developed through a stakeholder driven process. Inge was intimately involved in the stakeholder engagement process, including dozens of workshops with various City departments, regional agencies, NGOs, the community, academia, executive management, mayor's office. As project manager, Inge was responsible for the coordination of the work effort with City staff from multiple departments and more than 20 subconsultants. The final plan consists of 9 volumes, which will guide the City with strategic and multi-billion dollar decisions to make LA a more water resilient and sustainable City.

→ Technical Advisor for the OneWater Plan for the City of Morro Bay, California. This project involved the development of a strategic plan that considered the challenges of the City's wastewater treatment plant upgrade, development of local water supplies (including groundwater, indirect potable reuse and ocean desalination), water conservation strategies, and stormwater in a comprehensive manner. In addition, traditional water/wastewater/recycled water utility master planning with hydraulic modeling and CIP development was part of the project. Ms. Wiersema guided the One Water integration of all project components and optimization of plan recommendations.

→ Project manager for the Integrated Water Resources Plan for Otay Water District, California. This project involved the identification and evaluation of a wide range of water supply options to diversify the District's supply portfolio and reduce reliance on imported water through year 2050. The recommendations were presented to the board of directors.

→ Project engineer for Integrated Water Management Plan for the City of Riverside, California. The project identified a supply strategy to meet the City's potable and non-potable water demands, which will consider new wells, recycled water, groundwater recharge, salinity management, water conservation, stormwater, water treatment, and groundwater banking projects. The water supply evaluation identified 15 new water supply project opportunities. Detailed project descriptions, conceptual layouts, facility sizing, treatment options, and cost estimates were developed for each project. The projects were prioritized to meet the projected demands through 2035.

→ Technical advisor for the Public Works integrated master plan for the City of Oxnard, California. This project resulted in a long-term strategy and capital improvement program (CIP) for the City's water, wastewater, recycled water, and stormwater facilities, including a proposed aquifer storage and recovery (ASR) program. The project involved detailed analysis and CIP planning for the entire urban water cycle. Ms. was led the water master plan and was the technical advisor on the integration of all plan elements. The water master plan included water demand forecasting, hydraulic

modeling analysis using WaterGEMS, existing and future system analysis, development of a the water system CIP, including a rehabilitation and replacement program.

→ Project manager for the integrated water, recycled water, and sewer master plan for the City of Oceanside, California. This project includes potable and recycled water demand projections, sewer flow forecasting, water supply analysis, hydraulic model updates and calibration of the water and wastewater system models, and development of a new recycled water system model. An integrated master plan summary report was prepared that combined all plan elements into a prioritized roadmap, as well as individual master plan report for each water type to guide the City with the implementation of system improvements through year 2040.

→ Project manager for the 2014 comprehensive master plan for Padre Dam Municipal Water, California. This integrated master plan involves the District's water, wastewater, and recycled water infrastructure. This project includes potable and recycled water demand/sewer flows forecasting, water supply analysis, hydraulic model updates for the water and recycled water systems, development and calibration of a new sewer system model, and field condition assessment of key facilities. In addition, the feasibility of the wastewater plant expansion for an indirect potable reuse (IPR) project was evaluated. The findings were combined in a comprehensive CIP and water master plan report.

Relevant Master Planning & Modeling Experience

→ Project manager for the hydraulic model development project in 2012 for the City of South Pasadena, California. The project consisted of the development and calibration of a new hydraulic model, documentation, and training. A detailed field testing plan was developed and executed to collect field data for fire-flow, C-factor, and extended period simulation (EPS) calibration. The calibrated water system model was subsequently used to conduct a variety of on-call modeling analysis.

→ Project manager for the 2016 water and recycled water master plan for the City of Glendale, California. This project includes potable and recycled water demand forecasting, water supply analysis, hydraulic model updates for the water and recycled water systems. In addition, the infrastructure upgrades for the existing and future systems, including fire flow capacity upgrades, were evaluated. A facility condition assessment was conducted and recommendations were combined in a phased CIP, which was used to prepare a financial plan. Findings were compiled in a master plan report.

→ Project manager for the 2018 water system master plan for the Fontana Water Company. In addition to demand projections, supply analysis, water quality and treatment recommendations, storage and pump station analysis, a new hydraulic model was developed and calibrated in WaterGEMS to conduct hydraulic analysis of the entire water system. The CIP is supplemented by detailed project justifications that were presented to the California Public Utilities Commission (CPUC) for the 2018-2022 General Rate Case.

→ Project manager for the 2018 water system master plan for the Los Angeles County Division of the San Gabriel Valley Water Company. The project involved demand projections, water supply, water quality, treatment, storage and pump station analysis. A hydraulic model was updated and calibrated in WaterGEMS. The CIP was supplemented by detailed project justifications for the 2018-2022 General Rate Case for the CPUC. To complete the project within the aggressive 6-month schedule, Inge coordinated the work effort with a large project team located in 6 different offices in the US.

→ Project manager for the hydraulic model development for the City of Pasadena, California. A new hydraulic model was created and calibrated in InfoWater using field data.

→ Staff engineer for the Recycled Water Feasibility Study for the City of Pasadena, California. She served as the lead on development of the recycled water model and evaluation of various recycled water system configurations.

Education

MS Civil and Environmental Engineering, Stanford University, 1999

BS Applied Ecology, University of California, Irvine, 1998

Licenses

Professional Engineer, Oregon, Washington

Civil Engineer, California

Professional Affiliations

American Society of Civil Engineers

American Water Works Association

Matthew M. Huang, P.E.

Matthew Huang is an expert on hydraulic modeling and master planning and is Carollo's Distribution System Modeling Lead. He also has a broad base of experience, also working in water quality, water and wastewater treatment, water and sewer infrastructure, water resources, and wastewater system modeling and master planning, with experience in planning, design and construction. His project management background includes many large planning and design projects, with projects in 13 states and seven foreign countries. In addition, Mr. Huang has experience with a number of specialized computer programs, including InfoWater, H2OMAP, H2ONET, InfoSewer, InfoSWMM, InfoWorks WS, WaterGEMS, GoldSim, WEAP, and ArcView GIS, as well as a number of database, programming, scheduling, and spreadsheet programs.

→ Project engineer for San Gabriel Valley Water Company's two water system master plans, for their Los Angeles County Division and for the Fontana Water Company. Mr. Huang served as the hydraulic modeling lead for this fast-paced project, completing two water system master plans within a five-month period. This project was in preparation for San Gabriel's rate case to the CPUC, providing project justifications for use in the rate case.

→ Project engineer for Antelope Valley East Kern Water Agency's Water System Master Plan, California. This first-ever master plan for AVEK provides a comprehensive evaluation of AVEK's demands, water supply reliability, water banks, water system, staffing, replacement programs, SCADA system, water quality, design standards, and seismic reliability. These recommendations were combined into a Capital Improvement Program.

→ Project engineer for the Pasadena Water and Power Hydraulic Model Calibration. Mr. Huang's team was responsible for collecting field data, adding model controls, creating diurnal curves, and calibrating the model for both fire hydrant tests and for an extended period simulation.

→ Technical advisor for UC Irvine's Water and Recycled Water Master Plan, California. The project includes the creation of water system and recycled water system models, as well as a blueprint for additional facilities for UC Irvine to handle their projected growth and development on campus. This is the first water and recycled water master plan ever completed for the campus.

→ Technical review for Water Master Plan and Hydraulic Modeling Study for the City of Colton, California. Carollo performed a hydraulic evaluation for the City of Colton. Mr. Huang provided technical assistance on the hydraulic modeling, reservoir, and booster pump sizing for the master plan. He also provided review of a potential connection between the City of Colton and the City of Rialto and the impacts on Colton's water system.

→ Task engineer for Central Contra Costa Sanitary District's Collection System Master Plan, California. The project evaluates and models the entire collection system for the District. Mr. Huang's responsibilities include being the task engineer for the resiliency adaption plan and optimization plan. The main focus on the resiliency adaption plan is on the effects of climate change on rising water levels and peak storm events, while the focus of the optimization plan is on operation and maintenance procedures, as well as energy and chemical use.

→ Technical reviewer for City of Banning's Integrated Master Plan, California. Carollo is performing a water, wastewater, and recycled water master plan for the City of Banning. Mr. Huang is providing technical advice and review on various portions of the master plan.

→ Task engineer for One Water Los Angeles, California, Alternatives Evaluation. In OWLA, the project looks at the integration of all of the City's water assets, including imported water, groundwater, wastewater, recycled water, stormwater, and river flows. Mr. Huang is responsible for identifying large scale projects, identifying major criteria, and evaluating the projects based on that criteria to create portfolios of projects

for the City. The portfolios will then be evaluated to create a recommended plan for the City.

→ Project manager for the California Water Service Company Water Master Plan East Los Angeles District, California. Responsible for the coordination, planning, and execution of the project. In the project, his team evaluated existing and future water demands, water supplies, performing a facility assessment, and system evaluation for the District's water system. Key portions of the project included the development of a strategy to identify locations for new groundwater wells, including treatment, to increase groundwater supplies to allocated amounts. Another key portion of the project was the development of a facility inventory and condition assessment of all of the District's water facilities. Subsequent to the evaluation, a capital improvement program was developed for the District's water facilities.

→ Project manager for the La Puente Valley County Water District, Recycled Water Feasibility Study, California. He obtained a SWRCB matching grant for the District to pursue this study, and lead the team to complete the work. The work included identification of potential recycled water connections, evaluation of potential sources of recycled water, development, and evaluation of recycled water system alternatives, a cost evaluation, and development of recommended recycled water projects.

→ Project manager for the Long Beach Water Department (LBWD), Recycled Water Master Plan, California. This project for LBWD, in conjunction with Water Replenishment District (WRD), evaluates the available of recycled water supplies to serve additional recycled water customers. WRD was one of LBWD's largest recycled water customers; one of the key portions of this study was to evaluate whether there are sufficient recycled water supplies to meet needs for expansion of WRD's water treatment facility (using recycled water as supply for barrier injection). The study also develops alternatives and evaluates the feasibility of converting other customers from potable to recycled water and identifies the near-term recycled water projects for LBWD to pursue.

→ Project manager for the Central Basin Municipal Water District Recycled Water Master Plan, California. The project consisted in the development of the recycled water system for the District as well as portions of two neighboring regional water agencies, San Gabriel Valley Municipal Water District and Upper San Gabriel Valley Municipal Water District. He was responsible for the coordination of the project which included development of a recycled water demand database and identification of conceptual pipeline routings for future recycled water pipelines. The service area included over 1,000 potential recycled water customers within over 20 cities, as well as 25 segments of pipelines to serve these customers.

→ Project Manager for the Elsinore Valley Municipal Water District, Wildomar and Southern Region Feasibility Study, California. The District had previously designed a major trunk sewer and regional lift station to serve half of the District's service area for ultimate flow conditions. Due to economic constraints, the District was unable to construct the facility. This project evaluated alternative short-term solutions to address wastewater flow needs in this portion of the District's service area, as the existing system was already above capacity.

→ Project manager on the Long Beach Water Department (LBWD) Sewer Master Plan, California. The project included the development of a hydraulic model in InfoSWMM of LBWD's sewer collection system, calibration to field-collected flow monitor data and hydraulic evaluation of LBWD's entire sewer collection system. In addition, a pipeline replacement program was developed using a risk-based approach based on existing field maintenance data and pipeline condition assessments. Prioritization was developed for both pipeline inspection as well as rehabilitation programs. In addition to the Master Plan, Mr. Huang's team also completed the Sewer System Management Plan to meet State Water Resources Control Board Waste Discharge Requirements. Subsequent to the master plan, he developed a detailed pipeline rehabilitation program based on the review of field inspection videos.

Education

PhD Environmental Engineering, Institut National Des Sciences, Appliquees, France, 1994

MS Environmental Engineering, Institut National Des Sciences Appliquees, France, 1989

BA Biochemistry, University Paul Sabatier, Toulouse, France, 1988

Professional Affiliations

American Water Works Association, Membrane Technology Research Committee (Former Committee Member), Disinfection Systems Committee (Former Chair)

American Membrane Technology Association

International Desalting Association

WateReuse Association

Water Environment Federation

Gil F. Crozes, Ph.D.

Dr. Gil Crozes is a vice president at Carollo with 28 years of experience specializing in water quality, water and wastewater facilities planning, treatment processes, studies, and treatment plant design. He served the company as Manager of the Research Group for 10 years and also led a companywide Desalination Initiative. He coordinated the delivery of over 10 groundwater desalination projects, the majority of them located in California, Texas, Florida, Utah, and the Rocky Mountain states. His field of expertise encompasses conventional water and wastewater treatment processes as well as membrane treatment processes. He has membrane system expertise in reverse osmosis, nanofiltration, ultrafiltration, and microfiltration, along with ion exchange resin, and electrodialysis reversal, with applications in drinking water, reuse, and wastewater treatment. Other process expertise includes ozonation, advanced oxidation, activated carbon adsorption, air stripping, ultraviolet (UV) disinfection, and distribution systems water quality management. He has become well recognized in the water industry, having authored over 100 technical articles and papers.

Relevant Experience

→ Principal-in-charge for City of Los Angeles, Los Angeles Department of Public Works and Los Angeles Department of Water and Power One Water LA 2040 Plan. The plan aims to cooperatively develop an integrated framework and identify synergies for collaboration within the City and all of its City departments, as well as other agencies/entities, related to wastewater facilities, watersheds, water facilities and water resource efforts. This is a large undertaking as it is comprehensive in nature and connects water to environmental, economic, and social benefits that will build on the success of the City's 2006 Water Integrated Resources Plan (IRP). The project supports the City's goal to achieve even broader integration and collaboration in common water-related objectives, water planning, project implementation and funding to the extent possible.

→ Principal-in-charge for the Recycled Water Master Plan for the City of Carlsbad, California. This project included a recycled water market assessment including customer surveys, demand projections, development of a hydraulic model, hydraulic and water quality model calibration, analysis under existing and build-out conditions, and the preparation of a capital improvement program and comprehensive master plan report.

→ Principal-in-charge and project manager for the West Basin Municipal Water District, California, Capital Implementation Master Plan for Recycled Water Systems (CIMP). The CIMP was developed to address recycled water supply objectives and provide a road map of how implementation of future capital facilities will be achieved. The $1 billion order-of-magnitude CIMP includes facilities to expand the injection to the seawater barrier, the Title 22 system, and various services to industrial customers.

→ Principal-in-charge for the Proposition O Projects Optimization (TOS SN-60) for the City of Los Angeles Bureau of Engineering, California. In November 2004, Los Angeles voters passed the $500 million bond measure to fund multi-benefit stormwater management projects. To date, the City has implemented more than 30 projects using Proposition O funds. This project included review of the performance of 11 projects that use either natural treatment, chemical/mechanical, or low-impact development (LID) systems to treat stormwater. The performance review included overseeing water quality monitoring and developing standard operating procedures in collaboration with City staff.

→ Principal-in-charge for the Broadway Neighborhood Stormwater Greenway Project for the City of Los Angeles Bureau of Engineering, California. This project involved design of several recharge systems for a small subbasin in the Los Angeles River watershed to help reduce pollutant loading and increase recharge in the area. A predesign report and construction drawings were developed for two areas: a residential

neighborhood along 47th and 48th Streets where dry wells were designed and an area along Broadway Avenue, a four-lane street with commercial properties. Dry wells were designed for this area with careful consideration of location and depth due to proximity of larger building structures.

→ Principal-in-charge for the Penmar Water Quality Improvements Phase II for the City of Los Angeles Bureau of Engineering, California. This project involved design of a pumping system to convey water from an existing buried reservoir to a treatment facility before use as an irrigation supply. A 1,300-gpm submersible well pump was used due to high discharge pressure requirements (>100 psi) that traditional submersible pumps could not meet. A treatment building was included to filter and disinfect stormwater before being conveyed to the golf course and park irrigation system. An internal recirculation pump in the reservoir was included to improve disinfection and overall water quality before sending water out to the irrigation systems. A customized air-gap structure was also included to provide separation from the drain system and potable water system.

→ Principal-in-charge for the Temescal Canyon Park Stormwater BMPs Phase II for the City of Los Angeles Bureau of Engineering, California. This project involved design of a pumping system to convey water from an existing buried reservoir to a treatment facility before use as an irrigation supply. A 55-gpm submersible well pump was used due to high discharge pressure requirements (>100 psi) that traditional submersible pumps could not meet. A treatment building was included to filter and disinfect stormwater before being conveyed to the park irrigation system. An internal recirculation pump in the reservoir was included to improve disinfection and overall water quality before sending water out to the irrigation systems.

→ Principal-in-charge for the Los Angeles Bureau of Sanitation, California, Hyperion Treatment Plant (HTP) Secondary Evaluation and Study. The study evaluated alternatives to reduce the ammonia levels in the HTP secondary effluent that West Basin Municipal Water District (WBMWD) uses as the source of water for its recycled water treatment facilities.

→ Principal-in-charge for the Hyperion Reuse TOS SN-53 Program Management Services Project, Los Angeles Sanitation and Environment (LASAN), California. The project included program management support to develop the required for permitting MBR as pretreatment to reverse osmosis and other processes at the Hyperion WRP Advanced Water Facilities which distributes 235 mgd of treated water to the City of Los Angeles and other regional systems. Project management included contract development support, preparation of a Basis of Design Report, coordination with site-development, equipment prequalification, outreach, and engineering services during the Progressive Design-Build.

→ Principal-in-charge for the City of Los Angeles Department of Public Works Bureau of Engineering, Terminal Island Water Reclamation Plant Advanced Water Purification Facility Ultimate Expansion Project, California. Principal-in-charge and technical reviewer for the expansion of the advanced water purification treatment facility from 6-mgd to 12-mgd. The expansion includes additional microfiltration and reverse osmosis systems, advanced oxidation processes (AOP) system, and a balance of upgrades to the existing pumping systems, chemical addition system, comprehensive new control system, auxiliary systems, and utilities. The project includes the addition of an innovative AOP system using ultraviolet irradiation and sodium hypochlorite that will treat the full flow of 12-mgd and provide Full Advanced Treatment (FAT). To operate at a constant flow, as well as maximize production, the expansion includes a 2-million-gallon concrete tertiary effluent equalization tank upstream of the AWPF. Prior to the DB project, Dr. Crozes led two process evaluations tasks for optimizing and integrating the AOP.

Education

MS Environmental Engineering, University of California, Berkeley, 2005

BS Civil Engineering, California State University, Fresno, 2003

Licenses

Civil Engineer, California, Nevada

Professional Affiliations

Nevada Water Environment Association

American Water Works Association

Timothy J. Loper, P.E.

Timothy Loper is Carollo's Infrastructure Master Planning Services Lead and has 18 years of experience in water distribution system modeling, water system feasibility studies, wastewater collection system modeling, wastewater treatment facilities planning, and infrastructure master planning.

Relevant Experience

→ Project engineer for the OneWater Morro Bay Master Plan, City of Morro Bay, California. The project included water system field data gathering (pressure logger installation, SCADA system data gathering, and fire flow test data). That information, combined with the City's GIS and as-built drawings, was used to develop dynamic hydraulic (water and sewer) and hydrologic (stormwater) models for those systems. The calibrated models were used to evaluate each system under both current and future scenarios. Based on this evaluation, deficiencies were identified and the associated improvements necessary to eliminate these deficiencies were determined.

→ Collection system lead for the City of Riverside, California, Comprehensive Wastewater Master Plan. The Master Plan included both treatment and wastewater collections. Carollo built the City's collection system model using Innovyze's InfoSWMM modeling software.

→ Quality control engineer for the City of Banning, California, Water and Wastewater Master Plan. The project involved updating the City's water, sewer, and recycled water master plans into an integrated master plan to guide the City with budgeting and implementation of capital improvement projects. Responsible for quality review and project oversite and technical direction.

→ Project engineer for the City of Oceanside, California, Integrated Master Plan, which included a new collection system hydraulic model prepared from GIS data using InfoSWMM. The existing system was evaluated with respect to existing and future capacity needs. The master plan also considered a phased plan for replacement of the City's water and wastewater pipelines as part of the rehabilitation and replacement program.

→ Project manager for City of Tulare, California, Sewer, Water, and Storm Drain Master Plans. This project developed master planning documents for planning infrastructure improvements to serve rapid growth within the City. Responsible for coordination of the water, sewer, and storm drain computer models that integrate GIS databases into the modeling platform. The City's wastewater collection system included industrial and domestic collection systems with separate treatment facilities. The storm drain project required coordination with Tulare Irrigation District for discharge of storm water from the City's drainage facilities. This project also developed the City's Sewer System Management Plan.

→ Project engineer for the Elsinore Valley Municipal Water District, California, Wastewater Master Plan. Responsible for coordination of GIS system integration into the hydraulic model environment and construction of a SWMM model incorporating four separate collection systems stations with three wastewater treatment facilities. Capital project recommendations were made to serve future growth and system modifications were analyzed to eliminate lift stations and force mains with gravity sewers. The project also included preparation of a master plan report including a capital improvement program. This project also developed the District's Sewer System Management Plan for all four of its separate collection systems.

→ Project engineer for the City of Los Banos, California, Wastewater Collection System Master Plan. The project involved collection and review of as-built drawings to be used in the collection system hydraulic model. The City has severe infiltration and inflow problems resulting from storm drain inlets directly connected to the wastewater collection system. A SWMM hydraulic computer model was used to route historical rainfall events and base wastewater flows

for 72-hour simulations. The analysis determined that, if the direct connections were removed, capacity limitations in the existing system would be relieved. The City is experiencing rapid growth and a capital improvement program was developed to serve future growth areas within the General Plan Sphere of Influence. Provided cost information and allocation of cost to the City's utility rate consultant.

→ Project manager for the City of Turlock, California, Sanitary Sewer, and Storm Water Master Plans. Responsible for overseeing the construction of the City's sewer and storm drainage system hydraulic models. The City's sewer collection system includes numerous direct storm drainage connections to the sewer system in the City's downtown area. As part of the analysis, several improvement alternatives were considered to alleviate capacity deficiencies in the majority of the sewer collection system in the downtown area, including replacing existing sewer pipelines with larger diameter sewers or removal of the direct storm drainage connections to the sewer. Costs associated with each alternative were prepared and presented to City staff, along with the pros and cons of each approach. Ultimately, the City's preferred alternative was to segregate the sewer and storm drainage collection systems. Preferred improvements to the sewer and storm drainage systems were incorporated into the Sanitary Sewer and Storm Water Master Plan reports.

→ Project manager for the City of Cotati, California, Wastewater Collection and Water Distribution System Master Plans and GIS Implementation. The City of Cotati contracted with Carollo to develop water distribution system and sewer collection system master plans and its 2010 Urban Water Management Plan, as well as plan and implement the City's first GIS system. Responsible for day-to-day project management and client contacts. Also served as project engineer for the Sewer System Master Plan. Carollo constructed hydraulic models of both the water and sewer systems and developed a flow monitoring report from data collected from another consultant. Developed evaluation criteria, assessed existing system deficiencies, and developed plans for future projects.

→ Project engineer for City of Galt, California, Wastewater Collection, Water Distribution, and Storm Drainage Master Plans. The project developed master planning documents for planning infrastructure improvements to serve rapid growth within the City. Responsible for development of the sewer system model that integrated GIS databases into the modeling platform. Developed alternatives to eliminate the largest pump station in the collection system by constructing a 42-inch trunk sewer to the wastewater treatment plant.

→ Engineer for the Santa Clara Valley Water District, California, Recycled Water Master Plan. Responsible for construction of a recycled water distribution system model, analysis of future demand scenarios, and sizing of future facilities and facility improvements.

→ Project manager for the Shasta Lake 2016-2026 Water Master Plan, City of Shasta Lake, California. The project included development of a new water system hydraulic model based on the City's most recent GIS database of the water distribution system. The water distribution system hydraulic model was developed using the InfoWater hydraulic modeling software package, developed by Innovyze. The hydraulic model was calibrated using a three-step calibration approach, including a macro calibration, steady state (fire flow test) calibration, and an extended period simulation calibration.

→ Project manager for the City of Millbrae, California, Water System Master Plan. Carollo was contracted by the City to complete a water master plan that provided a capital improvement program to help mitigate storage deficiencies and hydraulic constraints caused by the separation of their four pressure zones. Tim was responsible for the update and calibration of the hydraulic model that was developed in InfoWater. The City's primary concern was lack of storage in its lower pressure zone and the potential for emergency outages in the event of a large earthquake.

Education

MBA Operations, Seattle University, 2005

BSCE Civil Engineering, Gonzaga University, 1992

Licenses

Professional Engineer, Washington

Civil Engineer, Oregon

Certification

Project Management Professional, Project Management Institute, 7/12/2011

Professional Affiliations

American Water Works Association (AWWA)

American Public Works Association (APWA)

Lara Kammereck, P.E., PMP

Lara Kammereck is a civil engineer with more than 27 years of experience focused on water and wastewater master planning for public utility systems. Ms. Kammereck specializes in master planning and demographic analysis and she has been involved in more than 50 comprehensive plans, master plans, and modeling projects. She has also worked on various water resources projects including source of supply analysis, emergency supply study, hazard mitigation plans, and vulnerability assessments. Her technical expertise also includes conceptual and preliminary design of pipelines and pump stations for both water and wastewater systems.

Ms. Kammereck is a trustee on the AWWA Water Resource Sustainability Division, chair of the national AWWA Water Resources Planning and Management Committee 2012-2015, and was project manager for the M50 Water Resources Planning Supply Practices Manual. In 2017, Ms. Kammereck served as Conference Chair for the Pacific Northwest Clean Water Association (PNCWA) annual conference.

Relevant Experience

→ Quality reviewer for the Water Master Plan Update for the City of West Sacramento, California. Reviewed the City's existing, skeletonized water system hydraulic model, as well as its most recent water system GIS database. As the previous model was about 10 years old, the City decided to construct the model from scratch based on its updated GIS database. The model was constructed in Innovyze's InfoWater hydraulic modeling software.

→ QA/QC lead for the Water Master Plan and Seismic Reliability and Resiliency Evaluation, Tualatin Valley Water District, Oregon. The District is the second largest water provider in Oregon, including over 762 miles of pipelines, 12 booster pump stations, 31 pressure zones, and 23 active reservoirs. The development of the District's 2015 Water Master Plan, included the development of the State's first Water System Seismic Resiliency Plan.

→ Quality manager and principal–in-charge for the General Sewer Plan Update for the City of Camas, Washington. The Plan includes an update to the City's sewer system hydraulic model to update the flow and load projections and provide recommendations for the Capital Improvement Plan. Additionally, an updated Operations and Maintenance Plan will be developed which focuses on Area Process Expectations.

→ Project manager for the City of Carnation, Washington, Stormwater Master Plan. The plan developed design criteria, evaluated existing basins and future development areas for deficiencies, and recommendations for regional stormwater detention facilities. The plan also established BMP and a public education program for future NPDES compliance.

→ Project manager for the City of Tukwila, Washington, Integrated Comprehensive Sewer and Water Master Plans. The Water Master Plan includes a water demand forecast, summary of source of supply analysis, detailed system supply analysis through year 2030, and CIP with associated financial requirements. The Sewer Master Plan includes sewer flow forecast and system analysis through year 2030. The project also involves evaluating existing lift stations for capacity to convey the projected quantities of sewage and infiltration and inflow (I/I), and a 20-year CIP.

→ Project manager for the 2017 Water System Plan Update for the City of Gig Harbor, Washington. The update will include an analysis of the existing systems, evaluation of the impact of future growth, federal, state and City regulations as well as recommendations regarding adequate supply and treatment and funding to meet future needs. A SEPA environmental review will be included.

→ Project manager for the 2017 Comprehensive Water System Plan Update for the City of Tumwater, Washington. The update will assess and update the short and long

Lara Kammereck, P.E., PMP

Awards

2017 OASIS Award for Water Resource Sustainability Division, AWWA

term strategy for supplying the City's customers with water meeting all regulatory requirements and optimization goals in a cost-effective manner; and ensure efficient use of available resources.

→ Project manager for the 2017 Water System Comprehensive Plan Update, City of Shelton, Washington. The Plan Update will encompass all changes to municipal water law and other requirements including the water service portions of the Shelton Area Water and Wastewater Plan. The Plan will include a water conservation program, capital improvement program, and a hydraulic model update.

→ Project manager for the 2015 Comprehensive Water System Plan for the Highline Water District, Washington. Prepared an update to the District's 2015 Water System Plan that evaluated the District's system for both 6-year and 10-year planning horizons. The new update included fresh demand projections based on land use and transportation analysis zone growth projections, updated supply, pumping and storage analyses, and hydraulic analysis of the distribution system suing the District's H20Net model. Recommended improvements were integrated into an electronic CIP tool that the District can continue to update in the future. The financial analysis included development of a financial program, cost-of-service analysis, rate structure evaluation, and General Facility Charge (GFC) update.

→ Project manager for the City of Bellevue, Washington, Comprehensive Water System Plan Update. Conducted an industry survey of storage criteria to benchmarks the City's criteria and recommend updates. Evaluated required storage volumes and identified future deficiencies for the City's 26 reservoirs. Storage improvement projects were sized to eliminate future deficiencies. Included planning for establishing emergency wells from existing, unused groundwater wells. Developed cost estimates to aid in evaluating at alternatives and creating phasing for the preferred alternative.

→ Project manager for the City of Renton, Washington, 2018 Long-Range Wastewater Management Plan Update. The project updated the City's plan and included an evaluation of the City's wastewater facilities using the City's updated and calibrated hydraulic model to develop a new 20-year CIP.

→ Quality manager/Principal-in-charge for the General Sewer Plan Update for the City of Camas, Washington. The Plan included an update to the City's sewer system hydraulic model and updated the City's Wastewater Treatment Plant Operations and Maintenance Manual.

→ Project manager for the Sanitary Sewer Master Plan Update for the City of West Linn, Oregon. This master plan update includes an evaluation of sanitary system performance that considers infill, redevelopment and new development, the identification of reduction strategies for inflow and infiltration, and operations and maintenance assessment, and the development and prioritization of capital improvement projects.

→ Project manager for the Reclaimed Water Comprehensive Plan for the City of Lacey, Washington. This Plan will identify potential future uses for reclaimed water, and where the City should focus efforts to develop a distribution system, capital improvement program, and financial plan toward that goal.

→ Project manager for the City of Lake Oswego, Oregon, Collection System Master Plan Update. The plan evaluated City policies and criteria, developed base and peak flows for each basin, assessed pipe and pump station conditions, evaluated capacity of major collectors and pump stations, and developed a CIP for addressing system deficiencies using the City's MIKE Urban hydraulic model. The plan will provide a practical and sustainable approach to the management of the City's wastewater system.

→ Project manager for Gig Harbor, Washington, Comprehensive Water Plan. The plan included a 20-year demographic analysis, source of supply study, update and calibration of the hydraulic model, and update of the CIP.

Education

BS Civil Engineering, California State Polytechnic University, Pomona, 2012

Licenses

Engineer-in-Training, California

Professional Affiliations

American Society of Civil Engineers

California Water Environment Association

Ryan M. Hejka

Ryan Hejka is a civil engineer with four years of professional experience. He is specialized in water and recycled water system hydraulic modeling and master planning projects and is skilled in the use of a wide variety of hydraulic modeling packages including InfoWater, H_2OMAP, Mike Urban, and Water GEMs. In addition, he has extensive experience with ArcGIS and proficient in multiple programming languages that he utilized to build several customized water optimization models and tools for water agencies.

Relevant Experience

→ Project engineer for the on-call hydraulic modeling for the City of South Pasadena, California. The project consisted of various hydraulic modeling evaluations to the hydraulic impact and new water system infrastructure requirements when new developers are connected to the existing distribution system. The model that was developed and calibrated during a previous project was utilized for these studies.

→ Task engineer for the Mass Balance Model for the One Water LA 2040 Plan, California. This project looks at the integration of all of the City's water assets. He was responsible for the development of a custom mass balance planning model that tracks all major flows in the City of Los Angeles in annual time steps from 2015 through 2020 under normal, wet, and dry year conditions. The modeled flow components include imported water, groundwater, wastewater, recycled water, stormwater, and discharges to the LA River and ocean. This model also includes a cost module and will be utilized in the alternatives analysis of the One Water LA 2040 Plan.

→ Staff engineer for the Water and Recycled Water Master plan for UC Irvine, California. The project includes the creation of water system and recycled water system models from AutoCAD maps, as well as a blueprint for additional facilities for UC Irvine to handle their projected growth and development on campus. This is the first water and recycled water master plan for UC Irvine. He was responsible for the model network creation from UCI's water system maps in AutoCAD, as well as the preparation of the model calibration plan.

→ Staff engineer for the Water Master Plan for the City of Colton, California. This project included water demand forecasting, hydraulic model development and EPS calibration using field fire flow testing. Existing and future system analysis was conducted to develop a CIP including a rehabilitation and replacement program. The findings were presented in a comprehensive water master plan report that was developed in conjunction with the Sewer Master Plan.

→ Staff engineer/modeler for the Comprehensive Facilities Master Plan for Padre Dam Municipal Water District, California. This integrated master plan involved the District's water, wastewater, and recycled water infrastructure. The project included (recycled) water demand/sewer flows forecasting, water supply analysis, hydraulic model updates for the water and recycled water systems, development and calibration of a new sewer system model, and field condition assessment of key findings. He was responsible for the modeling of the existing and future infrastructure. The feasibility of the wastewater plant expansion for an IPR project was also evaluated. The findings were combined into a comprehensive CIP and water master plan report.

→ Staff engineer/modeler for the Integrated Water, Wastewater, and Recycled Water Master Plans for the City of Oceanside, California. He was responsible for coordinating data gathering, supply analysis, and preparing the report on this $1.2 million assignment. The project involved water demand/sewer flows forecasting, water supply analysis, hydraulic model updates for the water and wastewater systems, and development of a new recycled water system model. In addition, the infrastructure needs of the development of the agricultural Morro Hills area, including soil percolation testing for feasibility analysis of septic tanks, were evaluated. CCTV of 60

sewer and 30 water pipeline segments was conducted. The findings were combined in a CIP and water master plan report.

→ Staff engineer/water system planner for the Water Master Plan Update for Mesa Water District, California. He was responsible for coordinating data gathering, designing the custom water supply and demand optimization model (WSDOM) in Microsoft® Excel, supply analysis, and preparing the report. This project involved demand projections, water supply analysis, hydraulic model update and calibration, extensive field condition assessment, and development of an optimization model. As part of the field condition assessment, all water system facilities (8 groundwater wells, 1 treatment plant, 2 reservoirs, 2 booster stations, and imported water connections) were visited. In addition, 2 miles of non-destructive pipeline testing was done. The findings of the modeling and condition assessment analysis were combined into a comprehensive CIP and water master plan report.

→ Staff engineer for the Integrated Water Master Plan for the City of Riverside, California. He was responsible for identifying potential stormwater recharge sites, sizing detention basins, sizing recharge site infrastructure, and preparing the report.

→ Staff engineer for the Water Master Plan for the City of Oxnard, California. This project included water demand forecasting, hydraulic modeling analysis using WaterGEMS, existing and future system analysis, development of a capital improvement program (CIP) including a rehabilitation and replacement program. The findings were presented in a comprehensive water master plan report that was part of the overall Integrated Master Plan.

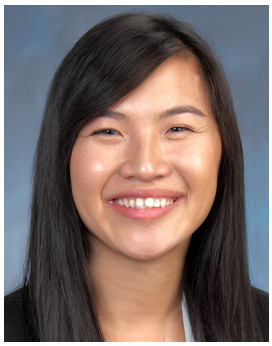
→ Staff engineer/modeler for the existing and future system supply and storage study for the Greenbelt pipeline system. The Greenbelt pipeline system is a main recycled water supply line of the Los Angeles/Glendale Water Reclamation Facility. He was responsible for determining the future infrastructure need of the storage and conveyance pipelines for customers along this pipeline.

→ Staff engineer/modeler for the on-call hydraulic modeling services for the expansion of the Los Angeles International Airport (LAX), California. Various fire flow scenarios were analyzed using the InfoWater hydraulic model developed by Carollo. He was responsible for updating the hydraulic model with their current facilities, hydraulic model analysis of pipeline velocities and residual fire flow pressures, and providing future infrastructure recommendations. The modeling results were used to advise the design team on layout and sizing of pipelines, valve configuration, and residual pressure.

→ Staff engineer/modeler for the water and fire water system analysis for the Utilities Infrastructure (UIP) master plan for LAX. The UIP included analyzing future water demand projections based on passenger counts. As part of this effort, As-Builts were utilized to update the existing LAX hydraulic model. Alternatives were then developed in the model to analyze existing and future water and fire water system deficiencies. Improvement projects were then prioritized into a phased capital improvement program (CIP) within the UIP.

→ Staff engineer for the Nitrification Study for Mesa Water District, California. This project involved extensive field data gathering and analysis to identify trends and solutions for nitrification events. He was responsible for the hydraulic modeling analysis that was conducted to identify potential hydraulic contributing factors, such as water age and system operations. Alternative operations were evaluated to determine the impact of hydraulics changes. Recommendations were included in the nitrification mitigation and prevention plan.

→ Staff engineer/modeler for the Metropolitan Water District hydraulic model development and calibration. He was part of a team responsible for building the District's hydraulic model from existing GIS data. He also assisted in the calibration of the model using historic data, as well as the calibration the model to utilize active controls.



Education

MS Environmental Engineering, University of California, Irvine, 2014

BS Earth and Environmental Sciences, University of California, Irvine, 2011

Aimee Zhao

Aimee Zhao joined Carollo in March 2015 as an environmental engineer. Her experience encompasses hydraulic modeling, ArcGIS, capital improvement program planning, and master planning. Additionally, she has experience in creating asset management tracking systems and water sampling programs. Her experience in the water resource environment has provided her with a myriad of duties that have helped her hone her role as a proficient environmental engineer.

Relevant Experience

→ Staff engineer for the 2019 Water Distribution System Infrastructure Plan for the City of Santa Barbara. This ongoing project includes potable water demand forecasting, Infowater hydraulic model updates, model calibration, supply analysis, outage scenario evaluations.

→ Staff engineer for the 2018 Water Master Plan for San Gabriel Valley Water Company Los Angeles Division. The project includes potable water demand forecasting, Infowater hydraulic model updates, model calibration, and supply analysis. In addition, the infrastructure upgrades for the existing and future system were evaluated and included in a capital improvement program (CIP) and report. Project justifications were developed for the near-term CIP and presented as part of the general rate case.

→ Staff engineer for the 2018 Water Master Plan for Fontana Water Company. The project includes potable water demand forecasting, Infowater hydraulic model development and calibration, and supply analysis. Infrastructure upgrades for the existing and future system were evaluated and included in a capital improvement program (CIP) and report. Project justifications were developed for the near-term (4-year) CIP and presented as part of the general rate case.

→ Staff engineer for the 2017 Integrated Master Plan for the City of Banning. The project includes and integrated approach to potable water, wastewater, and recycled water demand/flow forecasting, Infowater hydraulic model updates and model calibration for the potable water and wastewater systems, hydraulic model creation for the recycled water systems, and supply analysis. In addition, the infrastructure upgrades for the existing and future systems were evaluated for each system and included in an integrated capital improvement program (CIP) and report.

→ Staff engineer for the Water and Recycled Water Master plan for UC Irvine, California. The project includes the creation of water system and recycled water system models, as well as a blueprint for additional facilities for UC Irvine to handle their projected growth and development on campus. This is the first water and recycled water master plan for UC Irvine.

→ Staff engineer for the 2016 Water Master Plan for Cucamonga Valley Water District, California. The project includes potable water demand forecasting, Infowater hydraulic model updates, hydraulic model calibration using SCADA, and development of customer specific diurnals. In addition, the infrastructure upgrades for the existing and future systems will be evaluated and the findings will be combined in a capital improvement program (CIP) and water master plan report.

→ Staff engineer for the 2016 Water Master Plan for the City of Glendale, California. The project includes potable and recycled water demand forecasting, water supply analysis, hydraulic model updates for the water and recycled water systems using H_2OMap. In addition, the infrastructure upgrades for the existing and future systems, including fire flow capacity upgrades, were evaluated. The findings were combined in a capital improvement program (CIP) and water master plan report.

→ Staff engineer for the 2016 Water Master Plan for the City of Colton, California. The project included water demand forecasting, hydraulic model development and EPS calibration using field fire flow testing. Existing and future system analysis was conducted to develop a capital improvement program

Aimee Zhao

(CIP) including a rehabilitation and replacement program. The findings were presented in a comprehensive water master plan report.

→ Staff engineer for the 2015 Urban Water Management Plan for the City of Big Bear Lake Water Department, California.

→ Staff engineer for the hydraulic model development for the City of Pasadena, California. As part of this project, a new hydraulic model was created from GIS by Innovyze. Carollo conducted technical review of the model network and enhanced the model topology and added water system controls based on communications with the City's operations staff. A model calibration plan was prepared and the model will be calibrated for extended period simulation conditions. The model development process will be documented in a report along with a model maintenance manual.

→ Project engineer for on-call water system modeling for the City of Santa Barbara, California. As part of this on-call contract, various modeling studies were conducted related to the new desalination plant. Each study was summarized in separate technical memoranda. Studies completed to date include: 1) Energy Optimization Study for various production scenarios; 2) Extreme Drought Analysis with various supply options; and 3) Transmission Main analysis to serve Montecito Water District.

→ Staff engineer for the recycled water hydraulic modeling study for the City of Santa Barbara, California. The project involved incorporating future customer demands into the existing recycled water hydraulic model in Infowater. Various operational scenarios for the filling of a new potential storage pond and the golf course were evaluated to determine the best operational conditions to decrease pressure fluctuations throughout the system.

→ Staff engineer for On-Call Hydraulic Modeling Services for the expansion of the Los Angeles International Airport (LAX), California. Various fire flow and domestic water scenarios were analyzed using the Infowater hydraulic model developed by Carollo. The modeling results were used to advise the design team on layout and sizing of pipelines, valve configuration, and residual pressure.

→ Staff engineer for the 2016 Recycled Water Master Plan for Moulton Niguel Water District. This project includes recycled water demand forecasting, modeling, and alignment alternatives analysis to evaluate the most cost-effective system expansions. In addition, a turf replacement analysis tool was developed and a field condition assessment of existing recycled water system facilities was conducted. Ms. Zhao was responsible for the recycled water customer market assessment, purple pipe expansion analysis in GIS, and the development of the turf removal tool and analysis.

→ Staff engineer for the Water Element of the Utilities Infrastructure Master Plan for Los Angeles International Airport (LAX), California. The UIP included analyzing future water demand projections based on passenger counts. As part of this effort, As-Builts were utilized to update the existing LAX hydraulic model. Alternatives were then developed in the model to analyze existing and future water and fire water system deficiencies. Improvement projects were then prioritized into a phased CIP within the UIP.

→ Assistant engineer for various tasks for the Orange County Sanitation District, California. Tasks included:

- Assisted in the management of routine collection system cleaning, schedule, and data.

→ Engineering intern for the West Basin Municipal Water District, California. She was responsible for the following tasks:

- Assisted Engineering/Operations staff with capital improvement projects and department duties, including board memo updates for CIP projects, submittal reviews, permit applications, and grant applications.

  Created an asset management system (Microsoft® Access) to efficiently track asset conditions and inspection information, which was previously tracked manually by spreadsheets.

Education

BS Civil Engineering, California State University, Fresno, 2006

Licenses

Civil Engineer, Nevada, California

Professional Affiliations

American Water Works Association

California Water Environment Association - Central San Joaquin Section

Ryan F. Orgill, P.E.

Ryan Orgill brings 14 years of experience dedicated specifically to infrastructure master planning projects. His expertise includes hydraulic modeling (water, sewer, and recycled water) in various software platforms, master planning, and geographic information systems (GIS). Ryan specializes in creating and calibrating hydraulic models, development of analysis criteria, evaluation of existing water systems, and the development of improvement projects to mitigate existing deficiencies and to serve future growth. He has worked on infrastructure master planning and hydraulic modeling projects for clients throughout the western United States.

Relevant Experience

→ Project Engineer for the City of Morro Bay, California, OneWater Morro Bay Plan. Responsible for overseeing the development of hydraulic models of the water distribution, sewer collection, and storm drainage systems. Improvement projects and a capital improvement plan were developed to mitigate capacity deficiencies.

→ Hydraulic modeling lead for the City of Santa Barbara, California Water Model Update. Responsible for update and calibration of the City's water system hydraulic model using the InfoWater modeling software application, development of a system specific diurnal pattern for the City, and custom hydraulic model training for City staff.

→ Project engineer for the City of Cotati, California, Sewer and Water System Master Plans. Responsible for hydraulic model development and calibration, existing and build out analysis of the water and sewer systems, development of capital improvements to mitigate existing deficiencies and to service future growth, development of a staged capital improvement plan, and development of the final Sewer and Water System Master Plan reports.

→ Project engineer for the City of Tulare, California, Water System Master Plan. Responsible for hydraulic model creation and calibration, development of analysis criteria, evaluation of the City's existing water system, development of improvement projects to mitigate existing deficiencies and to serve future growth, and development of a staged capital improvement plan.

→ Staff engineer for the Los Angeles International Airport (LAX) Phase I fire flow analysis for the Central Terminal Area (CTA) of LAX, California. Responsible for development and calibration of a hydraulic computer model of the CTA water distribution system, development of evaluation criteria, and fire flow analysis of the CTA distribution system. The model calibration consisted of both an extended period simulation and a fire flow calibration of the CTA system. The fire flow analysis of the CTA distribution system involved evaluation of a number of potential alternatives to increase the available fire flow at various areas in the CTA distribution system.

→ Staff engineer for the Victorville Water District, California, 20-Year Comprehensive Water Master Plan. Responsible for calibration of the District's ID2 water distribution system hydraulic model, evaluation of the ID2 water system, and development of improvement projects to mitigate existing deficiencies and accommodate future growth.

→ Staff engineer for the City of Galt, California, Water System Master Plan. Assisted in the preparation of the City's Master Plan report and development of a staged capital improvement plan.

→ Staff engineer for the City of Hughson, California, Water System Master Plan. Assisted in the preparation of the City's Master Plan report and development of a staged capital improvement plan.

→ Project engineer for the City of Tulare, California, Storm Drainage System Master Plan. Responsible for hydraulic model creation, development of analysis criteria, evaluation of the City's existing storm drain collection system, development of improvement projects to mitigate existing deficiencies and to serve future growth, and development of a staged capital improvement plan.

Ryan F. Orgill, P.E.

→ Staff engineer for the City of Galt, California, Storm Drainage System Master Plan. Responsible for development of capital improvements to the storm drainage system in order to service future growth within the study area, assistance in the preparation of the Master Plan report, and development of a staged capital improvement plan for the City.

→ Engineer for the City of Oceanside, California, Sewer System Master Plan. Responsible for system evaluation, hydraulic modeling, development of the Sewer Master Plan report, and custom model training for City staff.

→ Project engineer for the Elsinore Valley Municipal Water District, California, Sewer System Management Plan, which included development and review of all applicable SSMP requirements, including a system evaluation and capacity assurance plan.

→ Project engineer for the City of Tulare, California, Sewer System Management Plan, which included development and review of a system evaluation and capacity assurance plan, overflow emergency response plan, and a fats oils, and grease control plan.

→ Hydraulic modeling support for the City of Paso Robles, California, Recycled Water Distribution System Design. The project includes preliminary design confirmation, final design, and bidding services. The system includes approximately 49,000 feet of pipeline ranging in diameter from 6 inches to 24 inches, 1-MG storage tank, and pump station. The project will cost $ 1.2 million and is estimated to be completed in August 2019.

→ Project engineer for the City of Galt, California, Recycled Water Evaluation. Responsible for identification of potential recycled water customers in and near the City, estimation of potential recycled water demands, development of a conceptual recycled water distribution system, and development of planning level costs associated within the implementation of a recycled water system.

→ Project engineer for the City of Cotati, California, Sewer and Water System Master Plans. Responsible for hydraulic model development and calibration, existing and build out analysis of the water and sewer systems, development of capital improvements to mitigate existing deficiencies and to service future growth, development of a staged capital improvement plan, and development of the final Sewer and Water System Master Plan reports.

→ Staff engineer for the City of Galt, California, Wastewater Collection, Water Distribution, and Storm Drainage Master Plans. Responsible for calibration of the hydraulic computer model to both dry weather and wet weather conditions, assistance in the preparation of the Master Plan report, and development of a staged capital improvement plan for the City.

→ Project engineer for the City of Tulare, California, Sewer, Water, and Storm Drainage Master Plans and Sewer System Management Plan. Tasks included creation and calibration of a dynamic hydraulic sewer system model to evaluate flow monitoring data, development of flow routing criteria, and evaluation of the existing sanitary sewer system to mitigate deficiencies to serve future growth.

→ Project engineer for the City of Turlock, California, Sanitary Sewer and Storm Water Master Plans. Responsible for overseeing the construction of the City's sewer and storm drainage system hydraulic models. The City's sewer collection system includes numerous direct storm drainage connections to the sewer system in the City's downtown area. As part of the analysis, several improvement alternatives were considered to alleviate capacity deficiencies in the majority of the sewer collection system in the downtown area, including replacing existing sewer pipelines with larger diameter sewers or removal of the direct storm drainage connections to the sewer. Ultimately, the City's preferred alternative was to segregate the sewer and storm drainage collection systems. Preferred improvements to the sewer and storm drainage systems were incorporated into the Sanitary Sewer and Storm Water Master Plan reports.

Education

BS Geology, Mississippi State University, 1994

MS Geology, University of Arkansas, 1997

Licenses

California Professional Geologist, No. 8347

PMI Certified Project Management Professional (PMP), No. 1574264

California Certified Qualified Stormwater Pollution Prevention Plan (SWPPP) Developer (QSD)/Practitioner (QSP)

Qualified Industrial Stormwater Practitioner (QISP)

OSHA Hazwoper Certification

Professional Affiliations

California Stormwater Quality Association (CASQA)

Bronwyn K. Kelly, PG, PMP, QSD/P

Bronwyn Kelly has 18 years of experience on a wide range of water resources projects. Throughout her career, Ms. Kelly has managed complex projects throughout Southern California with high political and environmental stakes, and is an expert facilitator of communication among clients, subcontractors, and personnel; and regulatory compliance issues. Teams have included hired in-house engineering staff, and subcontracted consultants.

Highlights of Bronwyn's career include service as the program manager for the Safe, Clean Water Program development with the City of Los Angeles, Bureau of Sanitation, and Project Manager and lead for multiple Enhanced Watershed Management Program (EWMP)/WMP development and CIMP implementation in urban runoff and stormwater quality monitoring programs, including the City of Los Angeles, the County of Los Angeles and Los Angeles County Flood Control District per the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit for Los Angeles County. Bronwyn also supported the City of San Diego's Storm Water Divisions, Water Quality Improvement Plans (WQIPs) Implementation for San Diego Watersheds.

As part of these projects, Bronwyn directed the implementation of non-structural and structural BMPs, and guided the client through a complex maze of stakeholder issues, technical feasibility issues, and political and regulatory issues to develop a cost-effective BMP iterative approach that met regulatory criteria, and environmental stakeholder group expectations.

Relevant Experience

→ Project Manager, Los Angeles Bureau of Sanitation, Safe Clean Water Program Development. In preparation of the implementation of the SCW Program throughout Los Angeles County, Carollo is providing program planning and implementation services for LASAN. As part of the multi-faceted program planning activities, the team focused on incorporating the SCW Program's three main objectives: water quality benefits; water supply benefits; and community benefits with a focus on disadvantaged communities. As part of the technical track, Bronwyn led a team through the development and review of feasibility studies of stormwater capture projects across the City.

→ Project manager, Torrance Airport Stormwater Infiltration Project, City of Torrance. The infiltration project consists of designs for diversion structures, underground pretreatment system, infiltration galleries with infiltration capillary units or underground cisterns with stormwater injection wells a, and two monitoring wells. Stormwater will be diverted via two storm drain inlets. The preliminary design utilizes an unsaturated and saturated flow model (MODFLOW) for purposes of evaluating mounding, water quality, and particle transport beneath the infuriation system and potential impact on existing groundwater contamination in the project area.

→ Project manager for Planning for Stormwater to Supplement San Diego's Pure Water Program, for the City of San Diego, California. The City of San Diego Pure Water Program evaluated the feasibility of capturing and treating stormwater and other runoff from urban areas to enhance long-term water supplies as part of Phase 2 of their program. The City of San Diego's Pure Water Program is a phased, multi-year program aimed at providing additional local supply through expanded water reclamation and advanced water purification. Phase 1 of the Pure Water Program will be the first potable reuse project permitted in California for reservoir augmentation. The City would like to evaluate the feasibility of capturing stormwater for diversion to the existing sewer system for use as an additional water supply for Phase 2 of the Pure Water San Diego Program. The evaluation includes: an assessment of the wastewater collection

Bronwyn K. Kelly, PG, PM, QSD/P

Work Approach

Some of the keys to Ms. Kelly's work approach include:

→ Facilitate collaboration with all parties involved with projects including clients, subcontractors, and impacted personnel.

→ Communicate project objectives and their relationship to organizational objectives with all stakeholders in a timely, unambiguous, and uniform matter. Delegate project objectives to team members based on their abilities, and incorporate individual goals and projects into team synergies.

→ Prioritize in-house and subcontracted resources according to project needs and goals.

→ Report team and individual successes and areas in need of improvement to senior management.

→ Ascertain and develop strategies to overcome hindrances to short-term and long-term project success.

system capacities and limiting reaches; a characterization of local watersheds suitability for capture projects; a review of wastewater treatment systems; a review of relevant regulations; and considerations of other infrastructure improvements that would be required to accommodate stormwater. Ultimately, 15 sites were focused on to develop conceptual designs. It was found that many of the concepts offer multiple benefits beyond primary objective (water supply though municipal reuse) including: stormwater compliance, environmental enhancement, groundwater recharge, recreational features; and direct harvesting and use at the sites.

→ Project manager for the City of San Diego Storm Water Division, Water Quality Improvement Plans (WQIPs) for San Diego Watersheds, California. Supported the City of San Diego (City) and other Responsible Parties in the development of Water Quality Improvement Plans (WQIPs) for the Los Peñasquitos, San Diego, and Mission Bay watersheds. Mandated by the 2013 San Diego Municipal Storm Water Permit, the WQIPs provide a systematic approach for addressing sediment and bacteria TMDLs in the watersheds.

→ Project Manager, City of Los Angeles Bureau of Sanitation (LASAN), TOS SN-39: Specialized Services for Proposition O Projects, Los Angeles, CA. Proposition O (Prop O) has funded a number of water quality improvement projects in the City of Los Angeles since 2004. The Prop O projects are part of a strategic plan identified in the Total Maximum Daily Loads (TMDLs) Implementation Plans required by the Los Angeles Regional Water Quality Control Board to meet water quality standards through the Municipal Stormwater Permit. The Prop O projects are new and unique, with multi-purpose benefits including water supply, water quality, flood reduction, storm water reuse, and recreation opportunities, and are designed to improve water quality in the City of Los Angeles. Under TOS SN-39, Ms. Kelly managed a team that evaluated the eleven (11) Prop O projects as part of the TOS that have been under construction during the "optimization period", in order to make sure that the project elements are working in an optimal manner to assist in meeting water quality requirements. During this optimization phase, the physical, chemical, and biological characteristics of the green projects will be examined, and proper protocols for hydraulic, vegetation, and treatment elements will be established for the long term sustainability of the Prop O projects.

→ Los Angeles Stormwater Quality Manager/Project Manager, City of Los Angeles Bureau of Sanitation (LASAN), TOS SN-61: Specialized Services for the Generation of Data Required by the Coordinated Integrated Monitoring Programs (CIMPs).

→ Los Angeles Stormwater Quality Manager/Project Manager, City of Malibu, CIMP for the North Santa Monica Bay Coastal Watersheds (NSMBCW). Managed a team that supported the stormwater and non-stormwater monitoring program as identified in the CIMP on behalf of the City of Malibu, the County of Los Angeles, and the Los Angeles County Flood Control District.

→ Los Angeles Stormwater Quality Manager/Project Manager, Upper Santa Clara River Watershed Management Group (USCRWMG). Led a team that assisted the City of Santa Clarita, the County of Los Angeles, and the Los Angeles County Flood Control District in the implementation of a CIMP that was developed along with an Enhanced Watershed Management Program (EWMP) in response to the National Pollutant Discharge Elimination System (NPDES), Municipal Separate Storm Sewer System (MS4) Permit issued by the Los Angeles Regional Water Quality Control Board (RWQCB).

→ Project manager for the Los Angeles County Department of Public Works, Upper San Gabriel Watershed Management Group, Enhanced Watershed Management Program (EWMP), Los Angeles, California. Led a team to assist in the development of the Upper San Gabriel River Watershed Management Group's EWMP and a CIMP in response to the MS4 Permit issued by the RWQCB.

Education

MS Environmental Engineering, University of Illinois at Urbana-Champaign, 2017

BS Environmental Engineering, McGill University, Montreal, Quebec, 2012

Laura M. Southworth

Laura Southworth, an environmental engineer, joined Carollo in 2017 after receiving a Master of Science degree in Environmental Engineering from the University of Illinois at Urbana-Champaign. She has experience on a variety of projects for water and wastewater.

Relevant Experience

→ Staff engineer for the City of Torrance Desalter Hydraulic Modeling Project. The project examined the implications and potential changes to the City's water system as it shifts from mostly imported water to mostly local groundwater as its main water source. The project modeled several scenarios with varying amounts of water provided by the City's wellfields and desalters under several projected demand conditions to anticipate major infrastructure improvements needed under each scenario.

→ Staff engineer for Metropolitan Water District of Southern California, Casa Loma Fault Crossing Project. Provided engineering on a design to replace Casa Loma Siphon Barrel No. 1, which is a component of the Colorado River Aqueduct. Barrel No. 1 has experienced recurring leaks along a reach that crosses the Casa Loma Fault zone. The design will address leaks due to siphon vertical displacement and includes replacement of 1,200 feet of pipe and couplings with a type of pipe referred to as earthquake-resistant ductile iron pipe.

→ Staff engineer for the project Simi Valley Sewer System Reliability Assessment and Financial Plan Update, City of Simi Valley, California. The update will support the City's investments in its wastewater facilities. The project will include a risk-based approach, criticality ranking, performance metrics, and determined expected outcomes of the Asset Management Plan (AMP). Specific tasks include evaluating and updating the City's existing asset inventory; identifying assets in need of replacement funding and determine replacement timing; incorporating the results of previous planning and asset evaluation efforts into a plan for aboveground and belowground sanitation assets; and prioritizing the rehabilitation and replacement (R&R) of assets through a risk-based framework.

→ Staff engineer for a Water System Master Plan Update for the Fontana Water Company (FWC), which is part of the San Gabriel Valley Water Company (SGVWC) an investor owned public utility water company in California. The project includes existing demand analysis, development of peaking factors and future demand projections through year 2045. In addition, the project includes a water supply analysis, water quality analysis, and groundwater treatment recommendations, storage and pump station analysis. Field condition assessments will be conducted for the systems 38 plant sites.

→ Staff engineer for the Lankershim Boulevard Green Street project for the City of Los Angeles Bureau of Sanitation, California. The project has the dual purpose of capturing stormwater for infiltration and greening the Lankershim corridor in Council District 2 located in the San Fernando Valley. The outreach component of the project aims at informing and engaging two distinct groups of stakeholders: business owners and residents near the project site. The project will be implementing green systems along the corridor in phases in order to mitigate the negative impacts of traffic and reduced parking. Components of these green systems include drywells, bio swales, and drought tolerant plant material. Trees will also be planted along the Lankershim corridor.

→ Staff engineer for the final design of North City Pure Water Facility (NCPWF), City of San Diego, California. This is the Pure Water Program's premier project and the first project of its kind in California. NCPWF will purify 34 mgd of tertiary effluent from the NCWRP to meet the recently published (July 2017) Title 22 California Code of Regulations for surface water augmentation indirect potable reuse (IPR) to discharge to Miramar Reservoir.

→ Staff engineer for the Demonstration Pure Water Facility (DPWF) Ozone and BAC

Laura M. Southworth

Relocation project for the City of San Diego, California. To allow for the construction of the North City Pure Water Facility (NCPWF) influent pump station, the City needs to relocate the DPWF biologically active carbon (BAC) filter and ozone systems. Carollo provided preliminary and final design for this project. As part of the preliminary design, Carollo evaluated existing BAC backwash system and identified areas of improvement. Carollo also provided structural evaluation of the existing chlorine contact basins.

→ Staff engineer for the SN39 specialized and expert services for Proposition O (Prop O) projects optimization for the City of Los Angeles Bureau of Sanitation (LASAN), California. The consulting team examined physical, chemical, and biological characteristics of the Prop O projects; prepared operations management manuals to establish proper protocols for long-term sustainability of the completed projects; and provided training to LASAN staff on optimizing the performance of the projects.

→ Staff engineer for the Advanced Water Treatment Demonstration project for the Metropolitan Water District of Southern California (MWDSC), California. MWDSC plans to operate the AWT Demonstration Facility for one year to determine the most appropriate process train for implementation in a full-scale AWT Facility that would produce water for groundwater recharge. The goal of the AWT Demonstration Facility is to obtain necessary scientific and technical data for regulatory approval and validate design and operating criteria for the full-scale AWT Facility.

→ Staff engineer for the DC Tillman Advanced Water Purification Facility (AWPF) for the City of Los Angeles Bureau of Sanitation (LASAN), California. The AWPF will treat up to 25 mgd of tertiary effluent from DCTWRP. Additionally, this project will replace DCTWRP's existing chlorine disinfection with ozone disinfection for Title 22 (irrigation) reuse applications. The DC portion of this project would convert the existing chlorine contact common effluent channel to an ozone contactor, such that the AWPF and DCF together would have the capacity to treat DCTWRP's maximum flow of 80 mgd. The AWPF and DCF will share the same liquid oxygen (LOX) storage and ozone generator equipment.

→ Staff engineer for the design of the Los Angeles Aqueduct Filtration Plant and Los Angeles Reservoir Ultraviolet Treatment Facilities for the Los Angeles Department of Water and Power, California. The project included the development of criteria and preparation of UV system drawings and specifications for the 600-mgd Los Angeles Aqueduct Filtration Plant and the 650-mgd Los Angeles Reservoir. The UV systems are designed to obtain Giardia and Cryptosporidium inactivation credit in accordance with LT2ESWTR, the UVDGM, and State Water Board Division of Drinking Water (DDW) requirements. Carollo was tasked with evaluating UV system hydraulics, electrical design, and UV system layouts including yard piping. Key challenges for UV implementation included the selection of design criteria for UV transmittance and fouling, selection of UV vendor technologies, addressing hydraulic constraints, and developing a UV system design and implementation strategy that met the overall project schedule with DDW approval. CFD to evaluate UV system layout alternatives, including inlet and outlet channels and bypass structures, to minimize headloss and optimize passive flowsplit with the UV system. The layouts also addressed geotechnical constraints, including known faults in the area of the UV facility, while minimizing excavation and yard piping costs.

Previous Experience

→ Graduate research assistant at the University of Illinois at Urbana-Champaign, Illinois. She was responsible for evaluating the impacts of organic fouling on membrane capacitive deionization systems. She also ran baseline fouling and cleaning experiments with a lab-scale reactor that she designed and built.

→ Laboratory/Field technician at UC Berkeley, California. She worked with a professor to conduct field work and lab processing/analysis for a biogeochemistry lab. She also assisted post-doctoral researchers with experiments and sampling.

Education

MGIS, Penn State University, 2017

BA Geography, California State University, Northridge, 2001

AA Geology, Pasadena City College, 1997

Certifications

Certified Geographic Information Systems Professional (GISP), Geographic Information Systems Certification Institute, 2012

Jackie M. Silber, GISP

Jackie Silber is a geographic information systems (GIS) lead with more than 16 years of professional experience in GIS and technical training. Her experience includes geospatial GIS analysis for water resource planning, environmental remediation sampling, and demographic forecasting projects. Her GIS skills focus on geodatabase design and optimization, manipulation and conversion of projections, CAD and KML to GIS conversion, spatial analysis, automation of repetitive analysis using Model Builder and Python, and creation of cartographic figures.

Relevant Project Experience

→ GIS specialist for the San Gabriel Valley Water Company Water System Master Plan Update, California. In addition to developing figures illustrating system deficiencies, Ms. Silber also developed a Python script to loop through an 11 million record table and sum the total water demands for every customer.

→ GIS specialist for the City of Banning, California. As part of the Integrated Master Plan, Ms. Silber developed figures representing the existing recycled water system as well as the proposed non-potable reuse system.

→ GIS specialist for the University of California, Irvine, Recycled Water System Analysis and Capital Improvement Program. Ms. Silber worked with hydraulic modelers to illustrate future system pressure deficiencies and pipeline velocities.

→ GIS specialist for the OneWater Plan for the City of Morro Bay, California. This project involved the development of a strategic plan that considered the challenges of the City's wastewater treatment plant upgrade, development of local water supplies, water conservation strategies, and stormwater in a comprehensive manner. In addition, traditional water/wastewater/recycled water utility master planning with hydraulic modeling and CIP development was part of the project.

→ GIS specialist for the City of Medford, Oregon Sanitary Sewer Master Plan. To help the City anticipate future needs, Ms. Silber, developed figures illustrating the locations of high I/I due to sewer trunk line deficiencies. Also investigated existing and future land use changes per parcel as part of a wastewater capital charge per equivalent residential unit analysis.

→ GIS specialist for the Hillsborough County, Florida Capital Improvement Program. As part of the on-call potential Septic Replacement/Water Line Extension Program, Ms. Silber performed geospatial analysis to determine the number of septic parcels within wellhead protection and high hazard coastal areas. Additionally, produced figures of wastewater facilities and parcels served by current infrastructure.

→ GIS specialist for a Long-Range Wastewater Management Plan for the City of Renton, Washington. As part of the pipe risk approach, Ms. Silber developed an ArcGIS-based criticality and vulnerability model. The model identified and prioritized critical assets in close proximity to key infrastructure or that are susceptible to failure.

→ GIS specialist for the U.S. Agency for International Development (USAID) Infrastructure Needs Program Bulk Water Supply Systems Master Plan (Southern West Bank, Palestine). As part of a team responsible for defining the future water facility needs in the southern West Bank, developed GIS data, traveled to the West Bank, and presented the data to USAID and other key stakeholders. With the help of bilingual staff, also conducted a workshop for GIS specialists to review the data developed, which included three geodatabases and a file system of existing and recommended water and wastewater infrastructure. Pipeline data was imported from AutoCAD and created from heads up digitizing on aerial photography and was compared against the hydraulic schematic. Assisted project managers with locating potential wells/wellfields based on topology, cone-of-depression, and other hydrologic constraints. Additionally, elevation profiles from ground surface data were created for proposed regional pipelines. Geologic scanned imagery was

georeferenced to a common projection system and a file system was created to maintain organization. Also served as internal project coordinator for the final deliverable.

→ GIS specialist for the Los Angeles County Waterworks District 29, California, Water System Master Plan. Compiled and developed a water infrastructure geodatabase and geocoded the water billing data to correlate metered usage data with parcels. Using current land use and future zoning parcel data, analyzed water demands for private customers. Also created pressure zones and allocated commercial demands for fire flow in InfoWater.

→ GIS specialist for on-call GIS services for the City of Westminster Water Department, California. To provide current updates to the District's GIS data, Ms. Silber cleaned, projected, and updated the City's valves and hydrant attributes. Additionally, she cleaned the pipeline topology and created a map book for field personnel. The data was delivered and used as part of the training for water district personnel on using maintaining the map book.

→ GIS specialist for the Stormwater Capture BMP Site Suitability Analysis for the Upper San Gabriel River Enhanced Watershed Management Program, California. Using a uniform grid, performed a multi-criteria decision analysis of valued and binary constraints to identify potential stormwater BMP sites in the Watershed as part of the Los Angeles County MS4 Permit Compliance. The constraints were scored and weighted to rank the locations. Iterative tasks such as classifying the locations were automated using python scripts.

→ GIS specialist for the Mission Creek and Garnet Hill Subbasins Water Management Plan for the Coachella Valley Water District, Desert Water Agency, and Mission Springs Water Districts, California. As part of a collaborative groundwater replenishment program, analyzed population and other demographic projections and mapped the watersheds and multi-habitat conservation areas.

→ Lead cartographer for the Los Angeles Department of Water and Power (LADWP), California, Owens Lake Groundwater Evaluation Program, which is a collaborative program between LADWP and the Inyo County Water Department to evaluate use of groundwater for dust mitigation on Owens Lake. Provided GIS support for well location identification, and was responsible for managing the GIS data for the project. Working with hydrgeologists and modelers, mapped surface geology, groundwater contours, consumptive use, and water quality surrounding the Owens Lake Bed. Also produced well log illustrations.

→ GIS lead for the Mesa Water District, California, Free Chlorine Conversion Study. Ms. Silber developed figures to illustrate the supply sources at different demand conditions.

→ ArcGIS online administrator/technical advisor for the City of Houston, Texas, Northeast Water Purification Plant.

→ ArcGIS online administrator for the City of Reno, Nevada, Northwest Model Expansion and Capacity Analysis and Master Plan Story Map project.

Kyle B. Rhorer

Kyle Rhorer has more than 25 years of experience in managing and delivering management consulting services to publicly- and privately-owned drinking water, wastewater, and solid waste utilities, as well as to regulatory agencies and other environmental services providers. Prior to joining Carollo Engineers, he was Vice President and Western Region Senior Client Manager for SAIC Energy, Environment and Infrastructure, LLG, formerly R. W. Beck, Inc. Mr. Rhorer specializes in the development of public-private partnerships for design, construction, and operation of water, wastewater, and solid waste utility infrastructure. He is also experienced in the areas of strategic planning, capital financing, financial management and controls.

Education

MBA Business Administration, University of California, Davis, 1993

BA Economics, University of California, San Diego, 1988

Professional Affiliations

Design-Build Institute of America

American Water Works Association

Water Environment Federation

Relevant Experience

→ Task leader for the Contra Costa Water District, California, Capital Program Financing Study, which involved development of short- and long-term financing strategies for a $200 million capital program consisting of capital improvements for a regional drinking water conveyance system. Responsible for identification and evaluation of various financing options (revenue bonds, federal and state loan/grant programs, capital reserves, sinking funds, etc.) with respect to funding availability, project applicability, and relative strengths and weaknesses. Overseeing the design of a comparative financial model that identifies all capital, replacement, and operations and maintenance costs for each financing option, as well as the timing and frequency of the financial outlays, resulting in a net present value comparison of options on a life-cycle cost basis that considers all costs, as well as inflationary impacts.

→ Project manager for the City of Sparks, Nevada, Rate Study and Utility Formation. Helped the City improve the fiscal management of its sanitary sewer, stormwater, and reclaimed water utilities while promoting a fair and equitable allocation of costs to customers. The project had three objectives: 1) develop an organizational and financial structure for the City's stormwater and reclaimed water utilities; 2) determine the adequacy of the City's revenue recovery practices for sanitary sewer, stormwater, and reclaimed water functions; and 3) develop an integrated, user-friendly financial model that will allow the City to determine fair and equitable user fees for the sanitary sewer, stormwater, and reclaimed water utilities in accordance with Title 13 of the Sparks Municipal Code. In the end, the City approved recommendations and the structure of the stormwater utility. Based on the reasoning in the study, the City Council committed to the rate adjustment.

→ Project manager for a valuation study for a confidential regional California drinking water utility that was considering acquisition of a smaller neighboring drinking water utility. The study involved identification of all capital and non-capital assets and financial analysis focusing on the long-term financial obligations and cash flow projections. The information was then applied to three valuation approaches (cost, market, and income) to produce a range of supportable valuations for the utility under acquisition consideration. Long-term financing considerations for the acquiring utility were then analyzed, along with stranded asset and economy of scale considerations and the associated potential rate impacts for both customer bases.

→ Project manager for the City of Tempe, Arizona, Integrated CIP Financial Planning Model. Developed a comprehensive financial model for the City that integrates its capital improvement program with budget and revenue management systems. The spreadsheet-based model develops 20-year budget and rate projections for the City's drinking water, wastewater, and irrigation systems. The model allows the City to run an infinite number of "what if" analyses to determine the budgetary and user rate impacts associated with alternative capital improvement programs. The model also facilitates rate sensitivity analyses at the customer class level to determine appropriate ratemaking policies for the City. The City adopted the model, which is currently being used to project user rates.

Kyle B. Rhorer

→ Project manager for the American Water Works Association (AWWA), Hawaii Section, CIP Financial Model and Rate Model for Small Utilities. Designed and developed an easy-to-use spreadsheet-based rate model for small drinking water utilities in Hawaii. Small Utility Rates and Finances (SURF) is a sophisticated budget- and rate-setting spreadsheet that incorporates a user-friendly interface for financial data entry. By answering a script of questions concerning the water utility's characteristics and historic costs, a utility manager directs SURF to automatically develop a budget and rate schedule.

→ Project manager for the South Coast Water District, Laguna Beach, California, Asset Management and Financial Equalization Study. Managed a comprehensive asset management engagement to assist the newly consolidated District in designing and implementing a 'financial equalization' strategy for its service area. The first step in the project was completing an inventory of all water and wastewater assets, as well as registering each and rating its condition. Findings from the inventory were used in determining the contribution made by each of the service areas during the consolidation process. Contributions were quantified and the appropriate 'financial equalization' was determined. Based on this information, the District's first 'asset registry' was developed from key information for each asset. Utilizing a valuation approach for each asset that took into account replacement value less depreciation, the asset condition ratings obtained during the site visits were applied to calculate the net contribution, by asset, for each service area. By analyzing the relative asset contributions provided by each service area, a supportable 'financial equalization' methodology was developed that will be implemented by the District to ensure fairness and equity for all ratepayers.

→ Project manager for the South Coast Water District, Laguna Beach, California, Water and Sewer Rate Methodology Development, which was a subsequent effort to the financial equalization study. Led the design of a new user rate structure for the District's newly consolidated water and sewer utilities. This project required a complete overhaul and consolidation of five separate rate structures, converting over 100 separate residential, commercial, and industrial user classes to a new streamlined revenue recovery methodology. In addition to designing the new water and sewer rate structures, developed a multi-year implementation strategy to ensure stable cash flow while minimizing user rate shock to District customers. The District adopted and implemented the new rate structure.

→ Project manager for the San Francisco Public Utilities Commission (SFPUC), California, CIP Strategic Business Plan. Managed a high-level engagement to develop an overall strategy for SFPUC's implementation of a $4 billion capital improvement program, the largest CIP in the history of San Francisco. Also served as key architect of the utility-wide planning process to develop a new organizational design and associated mission, vision, and performance measures against which the utility will evaluate the feasibility of implementing the program. In addition to all day-to-day project management responsibilities, developed an overall directional plan and strategy to involve all SFPUC stakeholders including customers, management, staff, and elected officials.

→ Project manager for the Santa Clara Valley Water District, California, Utility Performance Audit. Performed a comprehensive review of the District's water utility. The scope included a review of the operations, capital improvements program, water quality, public/government relations program, and financial management and business operators of the utility. The audit produced a series of practical recommendations, many of which the District is now implementing. Recommendations included a cost-of-service study, implementation of performance measures, and organizational realignment. Also led the financial performance assessment task and made recommendations to improve the District's fiscal management programs and capital planning functions.

David C. Baranowski, P.E.

David Baranowski is a senior analyst with Carollo Engineers' Utility Advisory Services and Strategic Management Group. He has been working in the fields of planning and asset management for more than 10 years, serving primarily water and wastewater clients. His project experience includes gap analyses, asset register and hierarchy development, risk analyses, renewal modeling, and the development of asset management plans for a wide variety of clients. He is also one of Carollo's condition assessment leads, responsible for efforts to assess facilities and plan for future work. His combination of experience in planning, asset management, and design helps to apply practical solutions to challenges.

Education

BS Mechanical Engineering, University of California at Berkeley, 2008

Licenses

Civil Engineer, California

Professional Affiliations

Water Environment Federations (WEF)

American Society of Civil Engineers (ASCE)

Relevant Experience

→ Condition assessment Lead for the Water System Master Plans for the San Gabriel Valley Water Company, California. David led the effort to assess the condition of the water distribution pipelines and the facilities (wells, reservoirs, and pump stations) to determine the renewal projects for the next 25 years. The Water Company operates two separate systems, which required the construction of two separate pipeline models that used leak data and geospatial references to calculate the risk of failure for more than 1,200 miles of water pipes. David conducted site visits of 80 facilities to visually assess condition and developed renewal costs for all sites.

→ Condition assessment task lead for the Comprehensive Wastewater Master Plan, City of Riverside, California. As part of the comprehensive plan, David led a team of engineers to assess six lift stations and the Regional Water Quality Control Plant. David developed a list of projects to be included in the master plan based on asset conditions and field observations. These projects included cost estimates and recommended timing to be included in the overall master plan financial planning rate and fee structure for the next five years.

→ Condition assessment task lead for the Integrated Master Plan, City of Banning, California. David led a team of engineers to visually assess City water and wastewater sites to determine the near-term and long-term funding needs based on the condition of the facilities. The project included the determination of project timing and costs to be included in the water and sewer master plan portions of an integrated master plan to guide the City with the budgeting and implementation of CIPs.

→ Condition assessment lead for the Master Sewer Plan for the Tahoe-Truckee Sanitation Agency, California. David led a multidisciplinary team of engineers to assess the condition of the Water Reclamation Plant with the purpose of developing a capital improvement plan for the next 25 years. David reviewed exiting information to produce a list of assets to be assessed, coordinated the 3-day field assessment with the team and the agency, and combined the results into a technical memorandum as part of the Master Sewer Plan. David was responsible for all aspects of the plant assessment, from planning to final results.

→ Project engineer for the Collection System Master Plan, Central Contra Costa Sanitary District (CCCSD), California. Project. David performed the risk analysis for the District's sewer pipes and created the updated collection system Asset Management Plan. The Plan included individual analyses for the sewer pipes, force mains, and pump stations including an updated asset inventory, results from recent condition assessment, risk results, projected funding needs, and recommendations to advance the Asset Management Program. David worked closely with the District to set up the risk analysis and delivering a working model to the District for future use.

→ Assistant project manager for the Sewer System Reliability Assessment and Financial Plan Update project for the City of Simi Valley, California. David led the day to day efforts of the project and was part of the condition assessment team that evaluated the City's Water Quality Control Plant. David evaluated the condition of the plant assets

to determine improvement projects for the next 20 years. He directed the creation of a sewer pipe model to identify improvement projects in the collection system. He developed cost estimates and prioritized all improvement projects for the collection system, plant, and SCADA system into a comprehensive 20-year capital improvement plan.

→ Technical lead for the InfoMaster Implementation, Cape Fear Public Utility Authority, North Carolina. David is currently leading the data review and model setup for the sewer pipeline replacement and rehabilitation model for the Authority's sewer system. The project will include the review of CCTV data and loading it into the model to be used to assess the condition of the pipelines. He will be responsible for the set up the model, produced results, and trained Authority staff on the use of the model.

→ Project manager for a Wastewater Treatment Plant Asset Condition Assessment Update for the Union Sanitary District (USD), California. David led the effort to conduct a multi-day assessment of all treatment plant assets. The project included updating the condition scoring and risk assessment framework to be used in the development of a 20-year Capital Improvement Plan (CIP) for the District's 33 MGD facility.

→ Assistant project manager for the Asset Management Plan Update for the Yorba Linda Water District, California. David led the effort to gather and analyze asset data to produce a long-term funding projection for the water and wastewater infrastructure assets to build upon the work completed in the 2010 Asset Management Plan. The project includes a risk analysis, facility condition assessments, and financial planning.

→ Project manager for the Utility Asset Accounting Analysis for the South Orange County Water Authority (SOCWA), California. David is currently assisting SOCWA with an evaluation of the asset records to determine the value of all wastewater collection and treatment assets to feed a financial audit.

→ Project engineer for the Facilities Master Plan for the Orange County Sanitation District (OCSD), California. David developed the renewal and replacement model for OCSD's collection system pipes using the InfoMaster software. David was responsible for creating the model and setting up a risk-based analysis to prioritize pipelines for renewal. David was part of a team that performed a quality check on OCSD CCTV data by watching inspection videos and checking the accuracy of CCTV scoring. David combined with information with other OCSD data and staff input to identify specific projects to be included in the Facilities Plan. The projects consisted of a map of the proposed alignment, project scope, estimated costs, and recommended timing for roughly 20 projects.

→ Project engineer for the Asset Management Organizational Assessment for the Fallbrook Public Utility District. David met with District staff and reviewed information to assess the current state of their Asset Management program. The assessment focused on the organization's practices related to the knowledge of their assets, how they evaluate condition and risk, and how they prepare and track their capital improvement program. The assessment included an evaluation of the existing information systems and how they are being leveraged within the Asset Management program. The final TM outlined specific ways for the District to improve its Asset Management program.

→ Project engineer for the Water System Facilities Condition Assessment for the City of Colton, California. He performed field inspections of 13 wells, 5 booster stations, and 5 reservoir sites. He prepared a condition assessment report that noted poor condition equipment, site issues, and upgrade recommendations for each of the sites and prepared a CIP budget for the next 20 years. The projected included a review of record drawings and City records for each of the sites.

Subconsultant Experience

SUBCONSULTANTS

Part of being an expert in water consulting is knowing which firms to team with when faced with a project that requires specific specialty services. Carollo has selected two subconsultants to augment our team who will provide quality and timely deliverable of our services. We have carefully selected these firms based on their expertise and familiarity with similar projects in Southern California.

V&A Consulting Engineers | Flow Monitoring

Since 1998, V&A has supported municipalities and agencies in managing their water and wastewater collection systems and mitigating sanitary system overflows. The firm's flow monitoring division incorporates the latest data collection and metering technologies and conducts a wide-range of inflow and infiltration (I/I) analysis for municipalities and master-planning consultants. V&A specializes in rain-dependent, groundwater and/or tidal I/I. They also perform reconnaissance providing a clearer picture of system condition. V&A consults on regulatory matters including U.S. Environmental Protection Agency (EPA) Consent Decrees, Stipulated Orders, or Administrative Orders.

Carollo has worked with V&A on more than 50 collection system planning and modeling projects within the last 15 years, including studies for the cities of Oxnard, Oceanside, Los Banos, Modesto, Morro Bay, Tulare, Galt, Oakland, the Central Contra Costa Sanitary District, West County Wastewater District, and Mt. View Sanitary District.

For this project, V&A will conduct flow monitoring to collect both dry and wet weather flow data to calibrate the City's sewer collection model. As shown on the schedule, we plan to conduct this work in February 2020 to maximize the chance of collecting wet weather events to determine the impact of I/I in the City's collection system.

Fracta | Water Main Risk Assessment (Optional Task)

Fracta is a cutting edge asset management solution that uses artificial intelligence (AI)—specifically Machine Learning—to assess the condition and risk of drinking water distribution mains. The Fracta Platform is a cloud-based software that can be connected to other important software applications used by water utilities such as GIS, Enterprise Asset Management (EAM), Computerized Maintenance Management Systems (CMMS) and Asset Management Planning and Optimization (AMPO).

Fracta can complete Likelihood of Failure (LOF), Consequence of Failure (COF), and Business Risk Exposure (BRE) assessments for an entire water main distribution system. Results are visualized using dynamic graphs and charts. New data can be uploaded and modeled several times per year, enabling a dynamic, near real-time assessment of the system.

The Fracta solution shifts asset operation and management from reaction to prevention. It helps avoid disruptive water main breaks, lower non-revenue water (NRW), better target leak detection and valve maintenance efforts, and educate key stakeholders on the true cost and risk of their aging water main infrastructure. This new way of looking at water main data for an entire water distribution system enables water engineers, financial planners, and executive management to make fast, accurate, and affordable asset management decisions about their buried water main infrastructure.

For this project, Fracta will conduct a phased water main risk assessment using the Fracta Platform if this optional task is elected to be included as part of the IWWRMP. During the first phase, the LoF of the City's water mains will be determined, while the CoF and BRE will be assigned in Phase 2. The risk scores will then inform the prioritization of the water main R&R program.

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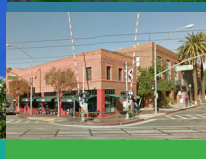
Project Understanding



PROJECT BACKGROUND & UNDERSTANDING

The City of South Pasadena (City) was incorporated in 1888 and is located just 6 miles northeast of downtown Los Angeles. The City is home to approximately 26,000 residents and is known for its historical homes, tree-lined streets, attractive neighborhood parks, excellent public schools, and small-town community atmosphere. The City is considered built out and has not experienced any significant population growth despite some densification along Mission Street, one of the City's main thoroughfares. The City provides water distribution, wastewater collection, and stormwater drainage services throughout its nearly 3.5-square-mile service area. A brief summary of each of these utility systems is provided below.

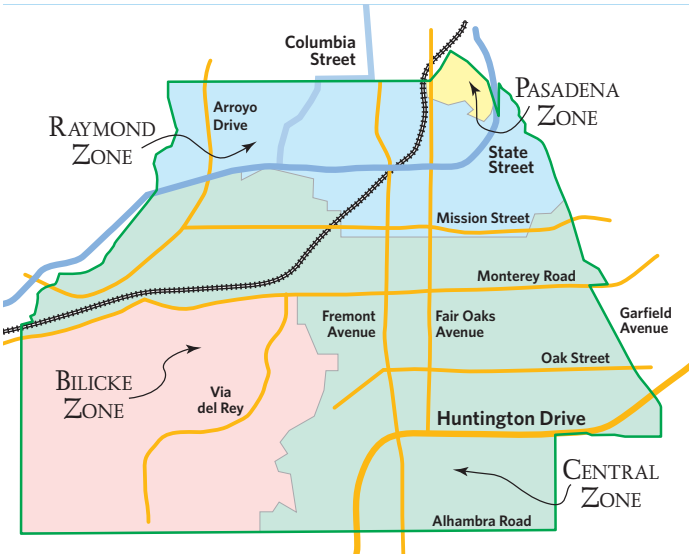
Potable Water System

The City's water distribution system is separated into five pressure zones and includes about 85 miles of pipeline ranging from 2 to 24 inches in diameter, five storage reservoirs, two elevated tanks, and six booster stations. The City obtains water from four groundwater wells, one treated imported water connection with Metropolitan Water District of Southern California (MWD), and several (emergency) interconnections with neighboring utilities, including Pasadena, Alhambra, and California American Water Company (CalAm). The City's water system has a significant portion of old pipes, with roughly 67 percent installed prior to 1950, that will need to be incorporated in a prioritized rehabilitation and replacement (R&R) program as part of this IWWRMP.

Sewer Collection System

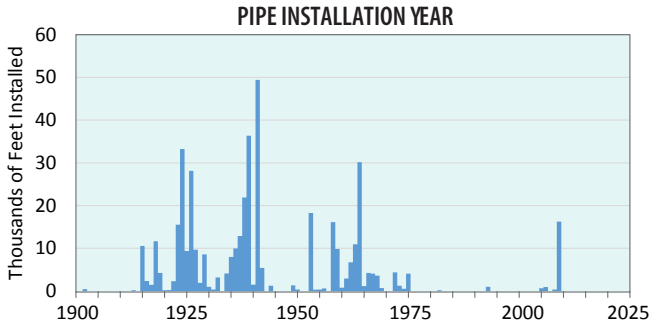
The City's sewer collection system consists of about 58 miles of pipeline ranging from 8 to 18 inches in diameter. The City has two lift stations, but does not own or operate any wastewater treatment facilities as the City's wastewater is conveyed to the Whittier Narrows Water Reclamation Plant (WRP) and the Joint Water Pollution Control Plant of the Sanitation Districts of Los Angeles (LACSD) via the County's trunk sewers.

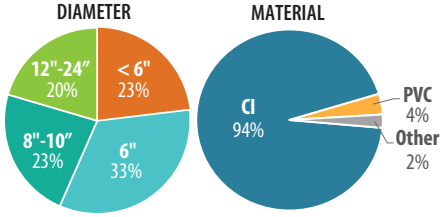
Approximately 60 percent of the City's sewer mains have been rehabilitated between 2014 and 2017 following an extensive CCTV inspection of the City's sewer network in 2009-2011. Since this major rehabilitation effort, the City's sewer system performance has significantly increased, eliminating historic sewer overflows



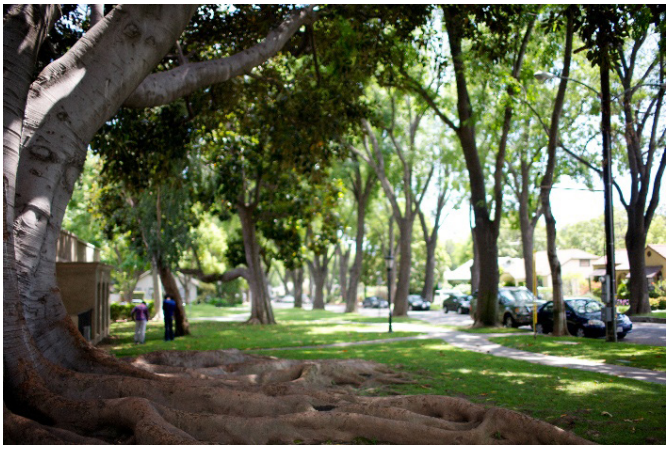
Despite the relatively small service area, the City's distribution system is relatively complex and separated into five pressure zones to accommodate the wide range in topography.

caused by sewer defects and root intrusion. The most recent Sewer System Management Plan (SSMP) was completed in 2009 and needs to be updated to reflect the extensive system upgrades as part of this IWWRMP. In addition, the City needs a hydraulic model of its sewer collection system to analyze hydraulics and identify capacity improvement needs.





The majority of the City's water system was constructed before 1950 and has mostly CI pipelines with diameters of 6 inches and smaller.

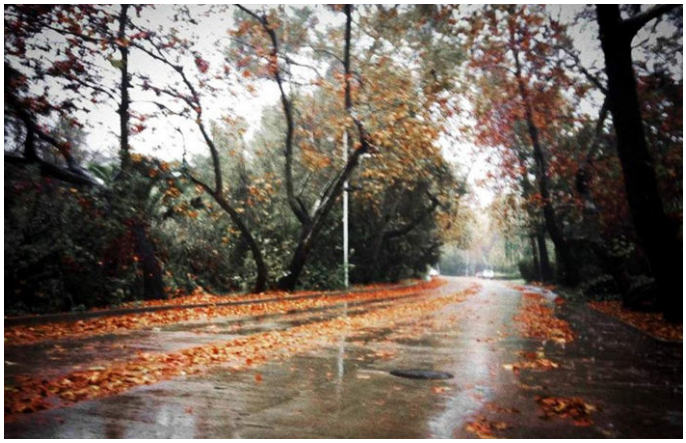


The City's abundance of beautiful, mature trees poses root intrusion challenges for the aging sewer and storm drain pipelines.

Stormwater Drainage System

The City's stormwater and urban runoff is collected and conveyed through a network of streets, catch basins, and a 100-percent separate stormwater drainage system to various receiving water bodies. This stormwater drainage system is maintained by both the City and the Los Angeles County Flood Control District (LACFCD).

To reduce discharge of pollutants and meet compliance targets of the MS4 Permit, the City participated in the Upper Los Angeles River Enhanced Watershed Management Plan (EWMP), which identifies regional stormwater capture and recharge projects. As implementation of these regional projects will likely result in changes of dry and wet weather flows, the City needs to develop a GIS-based map of the existing stormwater drainage system as part of the IWWRMP. Once the system is digitized and imported into a modeling platform, the City can evaluate potential hydraulic changes, capacity constraints, improvement needs, and opportunities for innovative stormwater management strategies.



Localized flooding during rain events is one of the storm drainage challenges in the flat portions of the City.

Recycled Water System

The City is a member agency of the Upper San Gabriel Valley Municipal Water District (Upper District), the regional recycled water supplier. However, the City currently does not use recycled water in its service area due to the absence of dedicated infrastructure to convey recycled water to supplies to the City. The closest recycled water pipeline of the Upper District is located in the Whittier Narrows area, roughly 10 miles from the City's boundary. However, the City of Pasadena is considering serving recycled water to their Glenarm Power Plant, located immediately north of South Pasadena's city boundary. The IWWRMP will evaluate the feasibility of various recycled water system configurations in case a recycled water supply connection can be made with Pasadena or Upper District.

Garfield Park is one of the potential anchor recycled water customers that could be served if recycled water would be available at Pasadena's Power Plant, less than a mile away.

PROJECT OBJECTIVE

The objective of this project is to prepare an integrated water and wastewater resources management plan that will provide a comprehensive roadmap of both near-term and long-term system recommendations. This roadmap will include capital improvements and operational strategies to help the City prepare for and adjust to future changing conditions. Carollo's integrated planning approach will result in a holistic "One Water" vision for the City that considers the inter-relationships between the various water systems and identify multi-benefit projects that provide more cost-effective system enhancements for the City and its customers.

PROJECT APPROACH

Based on our project understanding, we have identified key project challenges and objectives. We then tailored an approach and work plan to address these objectives to meet your unique project needs. The key components of our project approach are:

1. An **integrated "One Water" planning approach** that results in a holistic system evaluation and comprehensive prioritized roadmap with both near- and long-term improvements.
2. A **comprehensive water distribution model update and hydraulic analysis**, leveraging in-depth system knowledge
3. Utilization of artificial intelligence tool from Fracta to develop a **risk-based water pipeline R&R program**
4. Development of an **accurate sewer model based on rigorous calibration criteria** and state-of-the art tools
5. Efficient development of recycled water alternatives to make informed decisions when future water supply opportunities arise
6. The **prioritization of most beneficial stormwater management opportunities** to promote effective utilization of the new stormwater parcel tax funds.
7. Development of a **dynamic CIP planning tool** that puts the City the driver's seat.
8. A **comprehensive IWWRMP document** to promote clear and defensible decision-making.

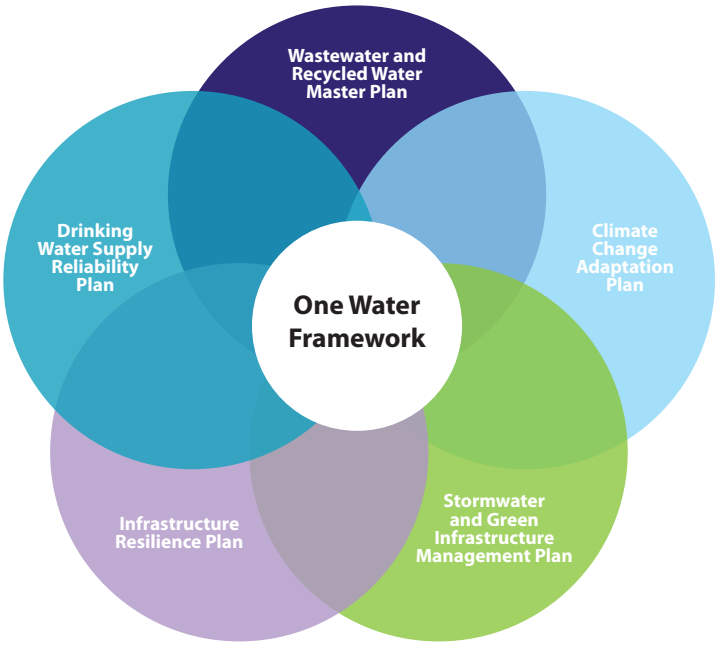
The Right Planning Horizon

The IWWRMP will include both near-term project recommendations for a 5- or 10-year planning period, as well as, a long-term capital improvement program beyond this horizon for a period of at least 25 years. To streamline this effort with the upcoming 2020 Urban Water Management Plan (UWMP), the long-term planning horizon is recommended to be year 2050. This allows any upcoming Water Supply Assessments (WSAs) between the 2020 and 2025 UWMP to utilize the demand forecast prepared as part of this WS&FMP as it would then meet the minimum requirement of a 25-year forecast.

1. Integrated "One Water" Planning Approach

Carollo's integrated "One Water" planning approach results in a holistic system evaluation and a comprehensive prioritized roadmap with both near- and long-term improvements. Our integrated planning approach involves close coordination of the potable water, wastewater, stormwater, and recycled water systems planning efforts to deliver a consistent and sound IWWRMP document.

As the national leader in One Water Planning, Carollo understands that "integration" is so more than just a concurrent planning of several utility systems by the same consultant. A truly integrated, comprehensive facilities master plan highly contrasts with multiple master plans prepared in isolation, and should not merely result in a single planning document. For example, the One Water paradigm embraces consideration of regional solutions that require institutional collaboration (e.g., for the City's recycled water and stormwater management solutions). In addition, we will develop a common set of planning criteria and align the various system evaluations to identify optimized multi-benefit solutions and proposed CIPs to maximize the public's investment.

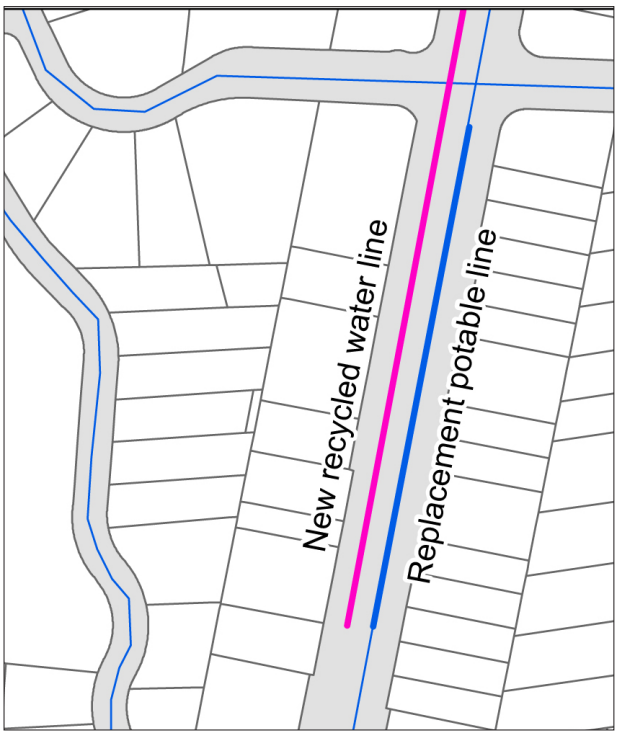


The City's IWWRMP scope already addresses many aspects of the One Water Framework as defined in the Blue Print for One Water (WRF, 2017). Carollo is THE team to help the City embrace this new paradigm shift in integrated planning.

Our proposed project manager, Inge Wiersema, is Carollo's National One Water Director. She is excited to bring lessons learned on integrated and One Water planning from around the country to her hometown, South Pasadena.

Carollo brings a long history of developing comprehensive integrated master plans for water, sewer, recycled water, and/or stormwater systems. Some examples of integrated master plans that we recently prepared for agencies similar to the City of South Pasadena are the water/sewer/storm/recycled water master plan for the cities of Oxnard, Glendale, Hesperia, Colton, Banning, and Morro Bay. Some other examples of integrated master plans prepared by our proposed team members are described in the references section of this proposal. Based on our experience, we know exactly where information between the different plans needs to be coordinated to efficiently deliver sound planning documents based on consistent planning assumptions and that result in cost savings. Some of the key project tasks that need to be closely coordinated are:

- **Water demand and wastewater projections.** It is imperative that potable demand and sewer flow projections be based on the same growth projections, anticipated land use changes, and water conservation assumptions. Specifically, indoor conservation measures, as now mandated to reach 50 gpcd by 2035, affect sewer generation flow rates. Additionally, any potable water demand offsets of potential use of recycled water needs to be accounted for. Carollo uses a demand and flow forecasting tool that accurately accounts for these interrelationships to achieve a sound planning basis for all components of the IWWRMP.
- **Hydraulic model updates.** A benefit of developing an integrated facilities master plan is that the hydraulic models and future scenarios can be constructed using similar database structures with consistent nomenclature, similar planning horizons, and identical data sources. The City currently uses H2OMAP Water modeling software for the water model. We recommend to convert that to InfoWater, the current standard modeling platform from Innovyze, and use InfoSWMM for the new wastewater collection model. InfoWater and InfoSWMM can also be utilized to construct recycled water and stormwater drainage models, if desired in the future. These GIS-based tools have similar graphic user interfaces and much of the same functionality, which makes it easier for City staff to use and maintain the models. This IWWRMP effort will provide consistency and coordinated planning through all utility systems.
- **CIP development and project phasing.** Another important step is the coordination of the phasing of proposed potable water, sewer, storm drain, and recycled water projects such that the CIP does not call for constructing different lines in the same street in 2 or 3 consecutive years. Correlating project phasing and even pipeline alignments can avoid unnecessary construction burden to the City's customers and save cost. We will also work with City staff early in the project to establish consistent cost estimating assumptions that reflect the cost of doing business in South Pasadena accurately and account for challenges like labor cost, tree-lined streets, and limited space for staging construction materials. Last, but not least, we coordinate the proposed timing of CIP projects where possible to achieve a CIP with balanced cash flow, by avoiding large annual fluctuations in the combined CIP expenditures.



Carollo will coordinate phasing of projects to avoid unnecessary construction disruption and minimize costs.

2. Comprehensive Water Model Update and Hydraulic Analysis

The Carollo team has the unique ability to leverage our in-depth water system knowledge from previous work in 2012, when our team developed and calibrated the City's first hydraulic model. Carollo has competed numerous fire flow analyses for developments and other modeling requests since 2012, and brings an in-depth understanding of the water system hydraulics that will allow our team to hit the ground running on the water model update and comprehensive hydraulic analysis.

Just like we did in 2012, Carollo will provide our own remote pressure loggers free of charge to achieve more accurate calibration results.

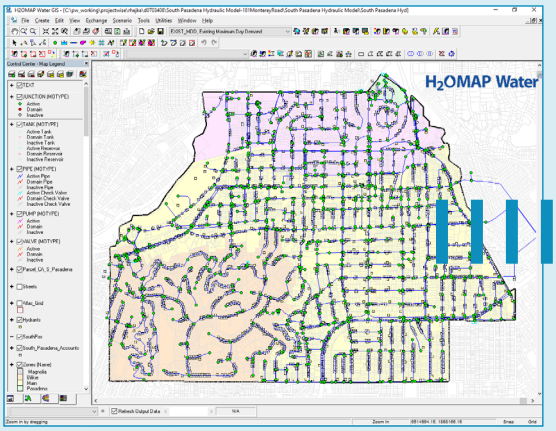
The first step of the water system analysis is to project water demands to the proposed planning horizon of 2050, which will allow the City to use the IWWRMP forecast for the 2020 Urban Water Management Plan to save time and cost on that effort next year. With the adoption of the State's new water conservation measures (SB 606/ AB 1668), the City will need to achieve approximately another 10- to 15-percent water conservation by year 2030 to meet the residential indoor demand target of 50 gpcd. The reduction of indoor demands will also be used to prepare the City's sewer flow forecast.

As part of the IWWRMP, we propose to conduct a model validation upon an update of the distribution network and input of current water demands using geospatial allocation of billing records. Just like in 2012, we will use Carollo's own remote pressure loggers to supplement SCADA data and fire flow test results. This method has proven very successful in the past when we discovered a closed valve on Indiana Street that was never opened again after the completion of the Gold Line construction. To our knowledge, Carollo is one of only two consulting firms in Southern California that owns these loggers and lends them to utilities for free to achieve more accurate model calibration results.

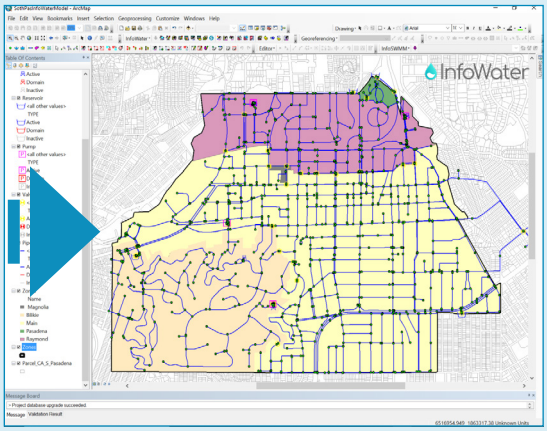
Our proven 4-step model calibration and validation process results in an accurate model that can be trusted for system analysis and sizing of improvement projects. Our team is dedicated to closely work with the City's operations staff like we have done in the past to utilize their wealth of system knowledge. Our collaborative approach to work with both engineering and operations also promotes confidence in the model as a useful tool for future use. Once the model validation results are approved by City staff, we will use the model to conduct typical hydraulic fire flow and capacity analysis under a variety of demand conditions.

The updated model database will also be used as the basis for the development of a prioritized pipeline replacement program. Rather than limiting this to typical end of useful life (EUL) indicators, such as pipeline age, material, and previous leakage history, we propose to use state-of-the-art technology that uses artificial intelligence to consider many other factors to predict risk of failures to help prioritize the water main replacement program (see Item #3 on the following page). As the City's average water system has a significant amount of old pipes, having a defensible method to prioritize replacements is critical!

H2OMap Water Model



InfoWater Model



Carollo is very familiar with the City's water distribution layout and hydraulics due to our team's water distribution model development and calibration in 2012 and involvement with various on-call modeling analysis in the past 7 years. To hit the ground running, we have already converted the City's model from H2OMAP Water to InfoWater, as H2OMAP Water has become obsolete.

3. Risk-Based Water Pipeline Replacement Prioritization

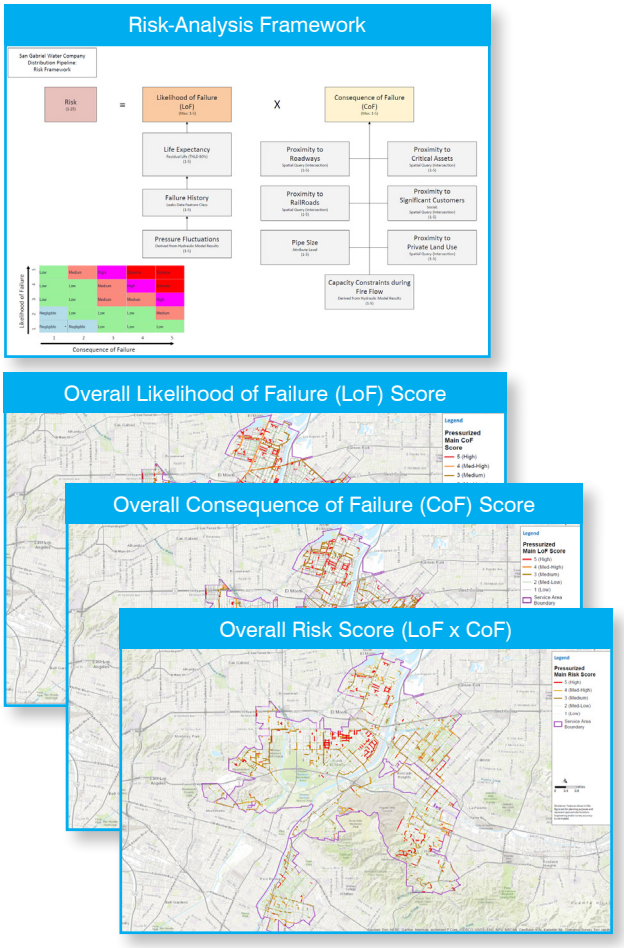
Although the City has already replaced nearly 60 percent of its sewer collection system in the past decade, the City's potable water system is quite old, and much of the infrastructure is nearing the end of their useful life. Rehabilitation and replacement (R&R) of aging infrastructure, specifically pipelines, are an important part of this IWWRMP. However, we know that age itself is not sufficient grounds for replacement and renewal. For this reason, we have included an optional task to use a risk-based approach that considers a variety of factors that can be spatially analyzed in GIS to help the City prioritize water pipeline replacements.

We will first develop a risk analysis approach with recommended risk factors, scoring, and weighting for each of the City's potable water pipeline segments. The risk analysis approach will be reviewed and finalized with input from City staff prior to the risk model analysis. The risk-based approach will consider the likelihood of failure (LoF) and consequence of failure (CoF) for each pipeline segment in the modeled pipelines.

Factors that could potentially be taken into account for the LoF analysis are pipe material, pipe age, historical leaks, maintenance/performance history, and soil type. Factors that could potentially be taken into account for the CoF analysis are the size of pipe, potential damage to structures, impacts to critical facilities (schools, medical facilities, and other community facilities), proximity to major roadways, railroad, or environmentally sensitive areas.

The LoF and CoF scores can be combined to calculate a risk factor for each pipeline segment. The findings of this risk analysis will be summarized and GIS maps for each of the selected parameters. The overall risk scores can then be used through a more manual manipulation process that combine individual pipeline replacement projects with similar risk scores. These logically grouped R&R projects are then prioritized based on the average risk in the master plan CIP.

Carollo has completed several risk-based pipeline R&R plans using InfoMaster, which is a tool that can be linked to the InfoWater Model as both packages are from Innovyze. However, Carollo has teamed with Fracta, a company that offers a similar Artificial Intelligence Tool with both LoF, CoF, and Business Risk Exposure (BRE) analysis capability to accurately predict first time and repeat main failures to help prioritize the water pipeline replacement projects. A rough estimate of this optional task is included in our fee estimate. However, our proposed scope and fee breakdown will need to be refined upon project selection and detailed review of available GIS data. As described in our scope of work, we propose to utilize Fracta's tool in two phases. During the first phase, the LoF will be determined for the City's entire water system. During Phase 2, this can be expanded to also include the CoF and BRE for each pipeline to develop a risk-based prioritized water main replacement CIP.



Carollo offers to conduct a risk-based analysis of the City's potable water pipelines to help prioritize replacements for the next decades using tools like InfoMaster or Fracta, following our same approach for two recent master plans completed for San Gabriel Valley Water Company.

4. Accurate Sewer Model Based on Rigorous Calibration Criteria

Carollo will develop a brand new collection system model utilizing the City's updated GIS database that was developed using the digital as-built drawings that were acquired after the completion of the significant sewer rehabilitation program that replaced more than 34 miles (nearly 60%) of the City's 58-mile sewer collection system in 2014-2017. Once the sewer GIS data is imported and refined in InfoSWMM modeling software (or similar), we will assign sewer generation flows based on fixture discharge rates and trouble shoot any remaining model run errors or warnings. The most important element to develop an accurate model that the City can trust to make important and often costly CIP decisions, is the model calibration phase.

The selection of flow monitoring locations is critical to the ultimate model calibration accuracy. Similar to our approach for the water modeling and analysis, we will work closely with the City's operations staff to develop and calibrate the sewer model, including the selection of flow monitoring sites to identify areas with 1) historical CSOs, 2) known capacity deficient areas, and 3) I/I isolations.

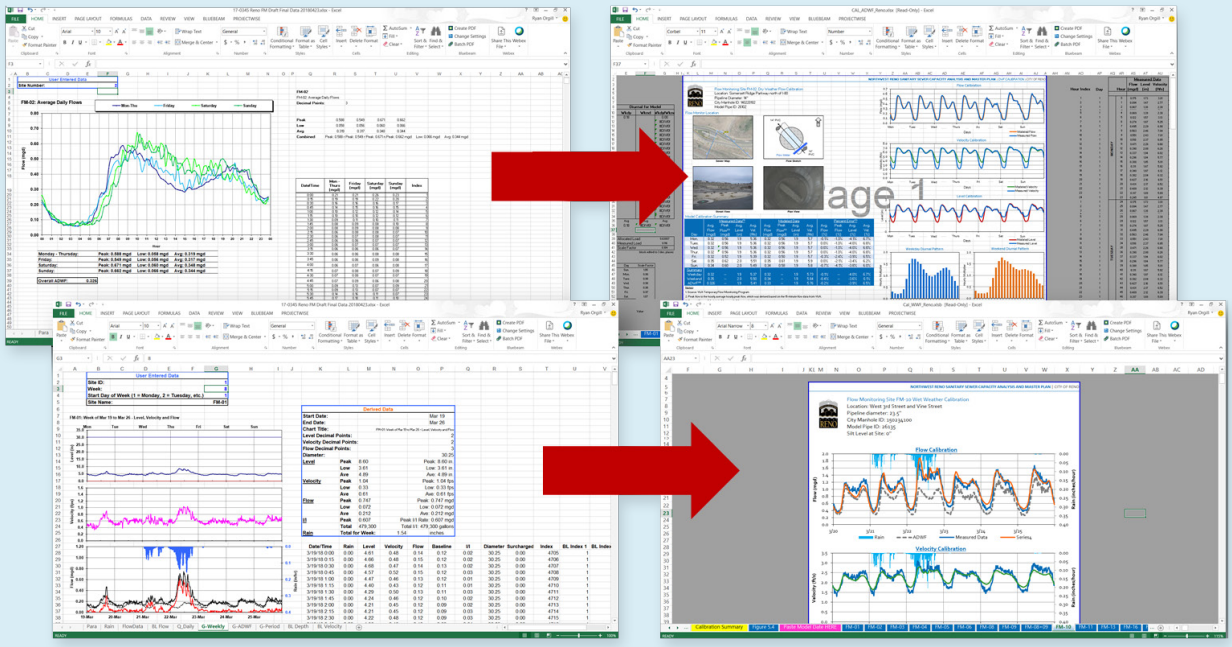
As highlighted in our subconsultant experience section of this proposal, we have teamed with V&A Consulting Engineers to conduct this field work. Carollo and V&A have collaborated on delivering more than 50 projects in the last 15 years and have developed an approach to flow monitoring that delivers quality, reliable data to seamlessly integrate with Carollo's modeling templates providing efficient and reliable analysis results.

Robust Model Calibration Builds Confidence in Modeling Results and CIP Recommendations

The Carollo team will spend considerable time making sure that the model accurately represents the way your system responds to wet weather, how your lift stations operate, and the level of flows that drive pipeline sizing and capacity projects. The most important element of model development is calibration, and not only calibration to flow, but calibration to hydraulic grade. Pipeline capacity analysis, and improvement sizing is based on level in the pipe, not just flow. Carollo is one of the only consulting firms to make level calibration a standard element of model development, which is one of the most important factors contributing to model accuracy. Without calibrating to flow levels, the City would not obtain an accurate view of system performance and required pipeline sizing.

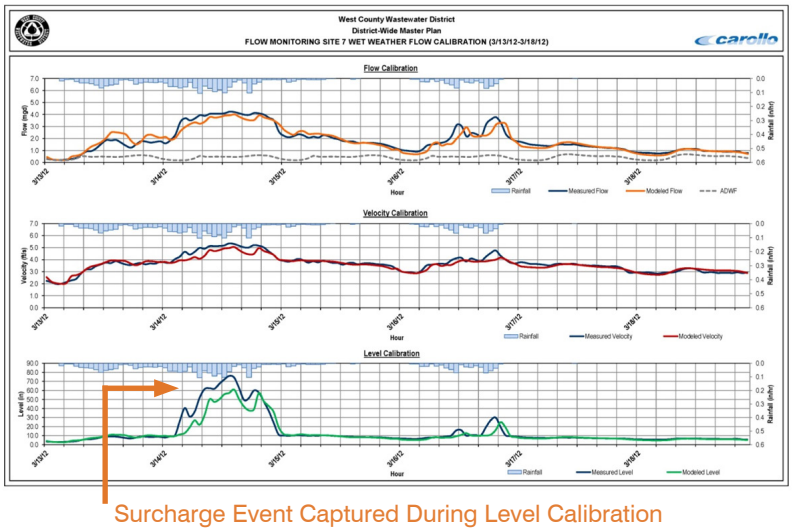
V&A Flow Monitoring Electronic Deliverable

Carollo Hydraulic Model Calibration Templates



Carollo's long-term collaboration with V&A has allowed for the efficient development of seamless flow monitoring and modeling tools. This integration results in increased efficiency and quality control.

Once we have confirmed that the model accurately simulates the flows in the City's collection system, we are ready to use the model for analysis and system evaluation. System improvements will be defined and prioritized in the phased CIP, including a R&R program for the remaining 40 percent of pipelines that were not replaced in the last decade. We will utilize the City's CCTV data and conversations with operations staff on issues observed in the field to prioritize the remaining replacement needs. Last, but not least, the sewer model update and analysis will also provide all the necessary information to update the City's latest SSMP, which was completed in 2009 and is due for an update.



Surcharge Event Captured During Level Calibration

By calibrating to level and velocity data, we will provide you with a model where you can have confidence in the results—ultimately it will help you reduce costs by not oversizing capital projects.

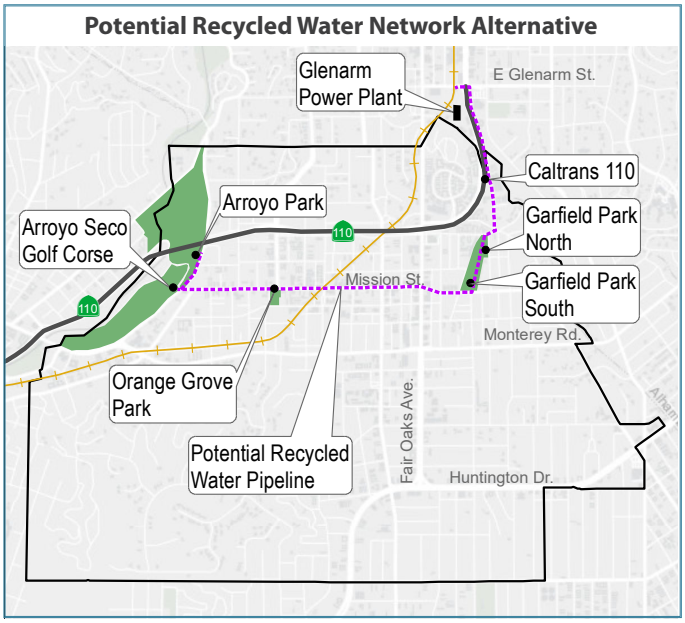
5. Efficient Recycled Water Feasibilty Analysis

The Carollo team will build upon our extensive knowledge of the recycled water systems in the region from previous and ongoing recycled water studies, such as recycled water planning work for Upper District, City of Glendale, and City of Pasadena, as well as the current work on the recycling program at the LA-Glendale WRP. We understand the interrelationships between these systems and the regional constraints to get a recycled water supply to the City of South Pasadena. In addition, we bring intimate knowledge about the potential recycled water customer base within the city boundary to quickly develop and evaluate the feasibility of potential recycled water system configurations.

Due to the distance of the nearest recycled water line from Upper District (≈ 10 miles) and their ongoing Indirect Reuse Replenishment Project (IRRP), it is unlikely that Upper District will expand its recycled water distribution system much closer towards South Pasadena. However, Pasadena Water and Power (PWP) may construct a recycled water pipeline to bring recycled water from the LA-Glendale Water Reclamation Plant (WRP) to the Glenarm Power Plant, or alternatively construct a wastewater scalping plant to serve this power plant with recycled water.

As shown on the adjacent figure, the City could potentially extend a recycled water pipeline from the Glenarm Power Plant to bring recycled water to serve irrigation demands of Caltrans along the 110 Freeway, Garfield Park, Orange Grove Park, and ultimately the Arroyo Seco Golf Course and Arroyo Park.

Carollo will quantify the potential recycled water demands of these customers and then build a simple hydraulic model to size the backbone system to size pipelines. We will then prepare cost estimates to conduct a feasibility evaluation of various recycled water system configurations in case a recycled water supply becomes available within reasonable distance. The cost of each alternative will be expressed in $/acre-foot to provide a comparison basis with the projected future cost of groundwater and imported water supply from MWD at the time the City may be able to purchase recycled water from PWP or Upper District.



Our team will build upon our extensive local knowledge and familiarity of reuse opportunities to develop a quick recycled water feasibility assessment for the City to consider a variety of potential options such as the pipeline shown.

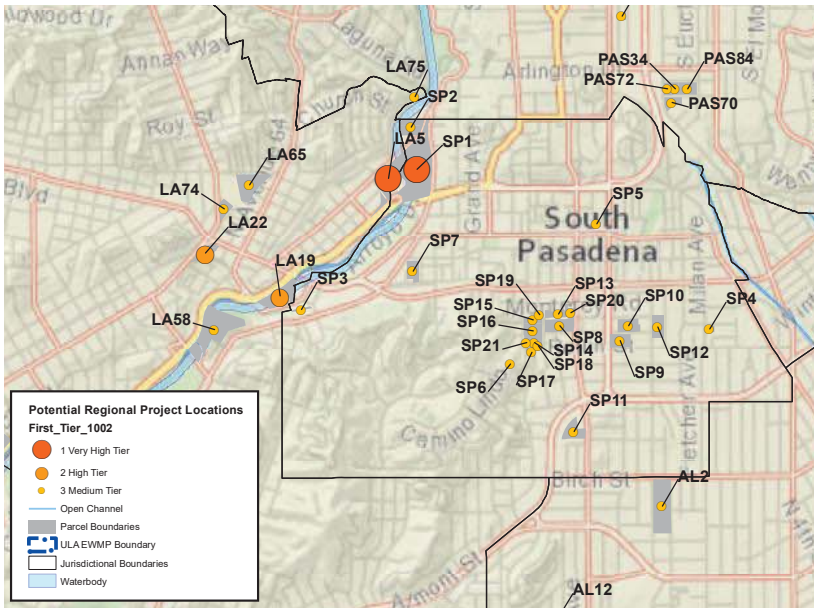
6. Prioritization of Stormwater Project Opportunities to Utilize New Parcel Tax Revenues Effectively

Now that Measure W has passed, Los Angeles County will have a sustainable revenue source that will generate approximately $300 million annually. The purpose of this new parcel tax is to fund stormwater and urban runoff management projects that provide water quality, water supply, and community benefits. The City will receive approximately $0.26 million per year to fund its stormwater and urban runoff management projects within its jurisdiction to address water quality objectives as established in the Los Angeles County Municipal Separate Storm Sewer System (MS4). These funds can also be utilized to fund operation and maintenance (O&M) cost.

Carollo's stormwater master plan task lead, Bronwyn Kelly, was the technical lead on the Upper Los Angeles River (ULAR) Enhanced Watershed Management Plan (EWMP) and thus brings in-depth knowledge to the City regarding this regional plan that has identified 20 projects within the City's boundary.

As part of the IWWRMP, Bronwyn will lead the analysis to help prioritize these 20 regional projects by assessing a variety of potential multi-benefits, such as:

- Water quality
- Water supply
- Flood risk mitigation
- Climate change resiliency



The Upper LA River EWMP has identified 20 projects within the City's boundary to improve water quality, water supply, and community benefits. Carollo will help prioritize implementation to use the new Measure W funding in the most beneficial manner.

- Habitat and ecosystem improvement
- Green and open space creation
- Heat island effect reduction

As part of the IWWRMP, Carollo proposes to identify the associated benefits using a qualitative method, similar to what our team is currently using for the King County Clean Water Plan. This method is easy to understand, fairly quick to execute, and avoids the risk of having to justify and explain numeric project scoring. We will work with City staff to assign benefit scores and then conduct a multi-benefit ranking to prioritize projects that achieve the most benefits for the investment.

POTENTIAL PROJECTS AND PROGRAMS	LOAD REDUCTIONS			THREAT REDUCTIONS				
	Pollutant A	Pollutant B	Pollutant C	Edible fish	Swimming	Shellfish harvesting	Chinook salmon	Orca
Option A	●	○	○	○	●	●	○	○
Option B	○	●	○	●	○	○	◒	◒
Option C	◒	○	●	◒	○	◒	◒	◒

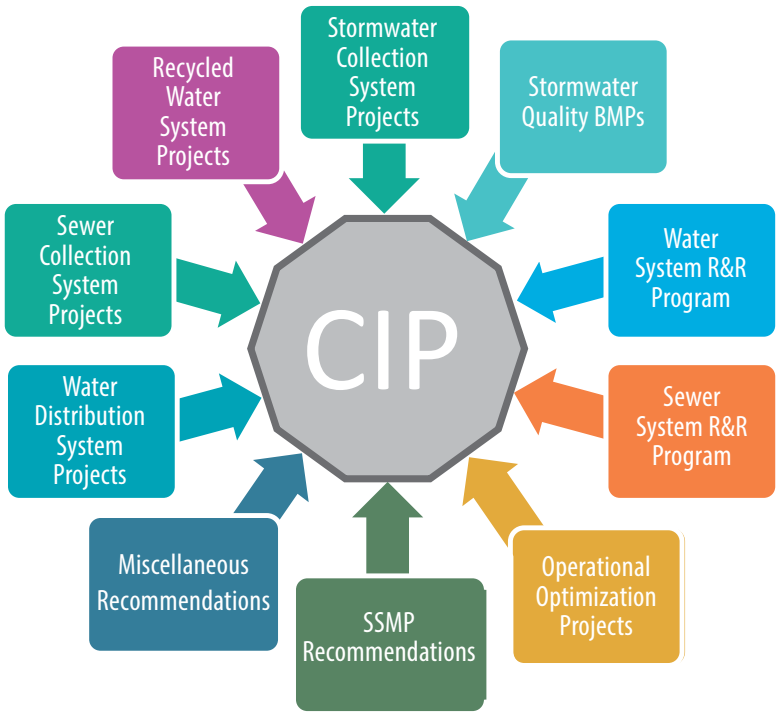
SYMBOLS: ● High reduction ◒ Medium reduction ○ Low reduction

Our proposed qualitative multi-benefit identification and ranking approach will help prioritize the nearly 170 stormwater projects in an efficient manner. This process is currently used for the Water Quality Benefits Evaluation of King County, Washington.

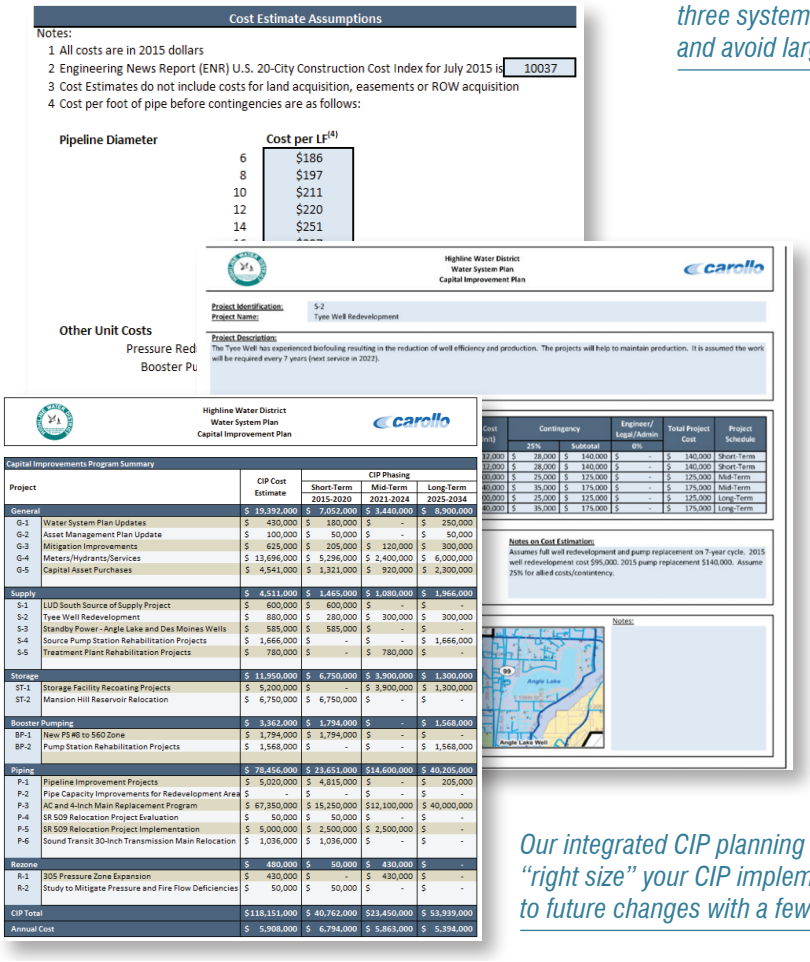
7. Development of a Dynamic CIP Planning Tool that Puts the City in the Driver's Seat

The CIP needs to identify what projects are needed, where they should be located, and why they are needed. Identification of trigger points is also critical to understand the basis of sizing and timing. The development of a comprehensive CIP is much more than just a compilation of projects as the phasing needs and priorities are not necessarily are going to align with the City's available CIP cash flow. Further complicating the phasing equation is the fact that no matter how accurate the IWWRMP is today, change in the future is a certainty, and that change will affect future CIP decisions.

To allow the City to quickly make updates to adapt to future conditions after the plan is completed, Carollo will deliver our dynamic CIP planning tool as part of our final work product. This tool puts the City in the driver's seat beyond the completion of the IWWRMP!



Our comprehensive CIP is more than a compilation of multiple project categories. We will adjust project phasing, pipeline alignments, and look for opportunities to share sites between the three systems to save cost, minimize construction disruptions, and avoid large fluctuations in capital expenditures.


Cost Estimate Assumptions

Notes:
1 All costs are in 2015 dollars
2 Engineering News Report (ENR) U.S. 20-City Construction Cost Index for July 2015 is 10037
3 Cost Estimates do not include costs for land acquisition, easements or ROW acquisition
4 Cost per foot of pipe before contingencies are as follows:

Pipeline Diameter	Cost per LF[4]
6	$186
8	$197
10	$211
12	$220
14	$251

Other Unit Costs
Pressure Red
Booster Pu

Highline Water District
Water System Plan
Capital Improvement Plan

Project Identification: S-2
Project Name: Tyee Well Redevelopment

Project Description:
The Tyee Well has experienced biofouling resulting in the reduction of well efficiency and production. The projects will help to maintain production. It is assumed the work will be required every 7 years (next service in 2022).

Capital Improvements Program Summary

Project		CIP Cost Estimate	CIP Phasing Short-Term 2015-2020	Mid-Term 2021-2024	Long-Term 2025-2034
General		$ 19,392,000	$ 7,052,000	$ 3,440,000	$ 8,900,000
G-1	Water System Plan Updates	$ 430,000	$ 180,000	$ -	$ 250,000
G-2	Asset Management Plan Update	$ 100,000	$ 50,000	$ -	$ 50,000
G-3	Mitigation Improvements	$ 625,000	$ 205,000	$ 120,000	$ 300,000
G-4	Meters/Hydrants/Services	$ 13,696,000	$ 5,296,000	$ 2,400,000	$ 6,000,000
G-5	Capital Asset Purchases	$ 4,541,000	$ 1,321,000	$ 920,000	$ 2,300,000
Supply		$ 4,511,000	$ 1,465,000	$ 1,080,000	$ 1,966,000
S-1	LUD South Source of Supply Project	$ 600,000	$ 600,000	$ -	$ -
S-2	Tyee Well Redevelopment	$ 880,000	$ 280,000	$ 300,000	$ 300,000
S-3	Standby Power - Angle Lake and Des Moines Wells	$ 585,000	$ 585,000	$ -	$ -
S-4	Source Pump Station Rehabilitation Projects	$ 1,666,000	$ -	$ -	$ 1,666,000
S-5	Treatment Plant Rehabilitation Projects	$ 780,000	$ -	$ 780,000	$ -
Storage		$ 11,950,000	$ 6,750,000	$ 3,900,000	$ 1,300,000
ST-1	Storage Facility Recoating Projects	$ 5,200,000	$ -	$ 3,900,000	$ 1,300,000
ST-2	Mansion Hill Reservoir Relocation	$ 6,750,000	$ 6,750,000	$ -	$ -
Booster Pumping		$ 3,362,000	$ 1,794,000	$ -	$ 1,568,000
BP-1	New PS #8 to 560 Zone	$ 1,794,000	$ 1,794,000	$ -	$ -
BP-2	Pump Station Rehabilitation Projects	$ 1,568,000	$ -	$ -	$ 1,568,000
Piping		$ 78,456,000	$ 23,651,000	$14,600,000	$ 40,205,000
P-1	Pipeline Improvement Projects	$ 5,020,000	$ 4,815,000	$ -	$ 205,000
P-2	Pipe Capacity Improvements for Redevelopment Area	$ -	$ -	$ -	$ -
P-3	AC and 4-Inch Main Replacement Program	$ 67,350,000	$ 15,250,000	$12,100,000	$ 40,000,000
P-4	SR 509 Relocation Project Evaluation	$ 50,000	$ 50,000	$ -	$ -
P-5	SR 509 Relocation Project Implementation	$ 5,000,000	$ 2,500,000	$ 2,500,000	$ -
P-6	Sound Transit 30-Inch Transmission Main Relocation	$ 1,036,000	$ 1,036,000	$ -	$ -
Rezone		$ 480,000	$ 50,000	$ 430,000	$ -
R-1	305 Pressure Zone Expansion	$ 430,000	$ -	$ 430,000	$ -
R-2	Study to Mitigate Pressure and Fire Flow Deficiencies	$ 50,000	$ 50,000	$ -	$ -
CIP Total		$118,151,000	$ 40,762,000	$23,450,000	$ 53,939,000
Annual Cost		$ 5,908,000	$ 6,794,000	$ 5,863,000	$ 5,394,000

Notes on Cost Estimation:
Assumes full well redevelopment and pump replacement on 7-year cycle. 2015 well redevelopment cost $95,000. 2015 pump replacement $140,000. Assume 25% for allied costs/contingency.

Notes:

This dynamic electronic CIP tool is developed in Microsoft Excel and compiles a master CIP from individual project sheets and a cost estimating assumptions sheet. The worksheets in the CIP tool are all interconnected and therefore easily updated. For example, when the timing, sizing, or cost estimate of a project is changed in the individual project worksheet, the Summary CIP automatically updates. The tool is also powerful during the annual budget cycle when the proposed project phasing may need to be modified to match annual cash flow and other funding sources revenues. We propose using our dynamic electronic CIP tool as a way to simply represent all of the projects.

Our integrated CIP planning tool allows you to "right size" your CIP implementation, and adjust to future changes with a few simple mouse clicks.

8. Comprehensive Documentation Promotes Defensible Decision-Making

We have developed a project approach and expert master planning team that is focused on "getting-it-right." The IWWRMP will ultimately present the City with millions of dollars of proposed projects for future years, so it is imperative that the recommendations are based on sound data, an accurate hydraulic model, and comprehensive system analyses. Accurate planning means that properly sized projects can be completed at the right time and the right place. But just as important as the analysis is the documentation of findings and how they were developed.

Detailed Documentation

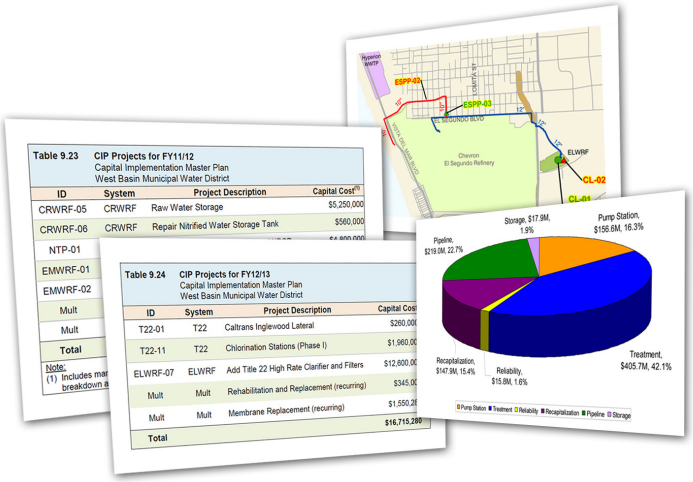
Carollo prides itself on the comprehensive nature of our water master plans because we know that this is the primary document that the City will use for CIP planning during the next decade. Our team will prepare a comprehensive integrated master plan with that long-term mindset. The goal is to provide the City with enough information to implement or postpone projects, even for City staff members that were not involved with the IWWRMP project and may pick up the document in future years.

Teamwork

During the project, we need to work closely with City staff to obtain an accurate understanding of your current systems, challenges, deficiencies, and objectives for the future. We expect that City staff will be intimately involved and conduct detailed reviews of the deliverables to make sure that the final model and plan are accurate. We embrace this teamwork approach and look forward being a partner with South Pasadena on this important project. Especially in the beginning stages, we will spend significant time working with City staff getting all the right information for the two hydraulic models and the stormwater drainage mapping. After that, the ball will be primarily in our court when we will conduct all the system analyses, identify deficiencies, and improvement projects. During the CIP development stage, we anticipate working closely together again to develop a master plan and CIP that the City can rely on when moving forward with project implementation.

Quality Control

Lastly, before we present our initial findings to you, we will complete our internal quality control process at the critical key milestones described in our scope of work. We have included two dedicated technical reviewers who are not involved in any other project tasks so that they will have a fresh look at the work during technical reviews. Our quality control procedures will make sure that the numbers are right before our work is submitted to the City to promote smooth reviews on your end. After all, it's our job to make your job easier, not harder.



Carollo prepared a very detailed CIP to accommodate the needs of various departments including upper management engineering, finance, and operations.

SCOPE OF WORK

Carollo has developed a detailed scope of work (SOW) that follows the scope of work of the RFP as closely as possible. However, we have added dedicated subtasks and grouped the elements slightly different to maintain a logical work flow. We have also added a dedicated task to clearly describe our anticipated level of effort for project management and meetings. Lastly, a number of optional tasks have been suggested throughout this scope of work to enhance the project in various ways. These optional tasks are summarized at the end of this scope of work document and are budgeted separately.

Task 1 – Project Management and Meetings

1.1 Project Management and Coordination

This task includes managing the project team to track time and budget, work elements accomplished, work items planned for the next period, manpower, scope changes, time, and budget needed to complete the project. This task also includes maintain a working project schedule and providing the City with monthly invoices and corresponding progress reports. The effort of this task is based on a 12-month project duration.

1.2 Project Meetings

The project will be launched at a kick-off meeting to confirm project objectives, introduce team members, establish communication lines, and discuss the project schedule and data collection list. In addition, a report draft outline will be prepared and discussed at the kick-off meeting to promote efficient report production. Carollo will prepare and submit meeting agendas and meeting notes.

In addition, Carollo will conduct up to 11 monthly progress meetings (12 in-person meetings total) to discuss ongoing status of the project and to present preliminary results from the analysis. Carollo will prepare and submit meeting agendas two days prior and meeting notes within 5 days post each meeting. Our project manager will attend all persons in-person, typically with the project engineer. Other staff members will attend in-person or by conference call on an as-needed basis.

1.3 Conference Calls/Webmeetings

Carollo schedule bi-weekly conference calls/web meetings to facilitate continuous project communications and move the project along. The duration of these conference calls are assumed to not exceed 1 hour, depending on project needs. Our proposed project manager will attend the majority of these webmeetings in-person, depending on the meeting topic. There will be no bi-weekly conference calls in weeks that overlap with project meetings. As shown on the project schedule, it is estimated that there will be up to 20 conference calls/webmeetings. The project manager and project engineers will attend all conference calls/webmeetings.

1.4 Public Meetings

Carollo's project manager, Inge Wiersema, and as-needed team members will prepare and give up to two (2) presentations to the City Council, city committees, or members of the public. Carollo's team will provide up to 60 hours of support services to prepare graphics for public meetings or workshops with City customers and stakeholders to present findings of this project.

Task 2 – Potable and Recycled Water Master Plan

2.1 Data Gathering

Carollo will coordinate with City staff to collect and review relevant documents, GIS data, operational records, billing data, production records, water supply information, existing asset management programs, and other pertinent data related to update of the IWWRMP. It is assumed that all this effort will not exceed more than 40 hours.

Carollo will prepare a prioritized data collection list to track the status of various documents. Review of the data collection list will a standing agenda item for all meetings/conference calls during the entire project.

2.2 Facility Inventory and Operational Assessment

Carollo will create a facility inventory of the City's potable water tanks, pump stations, control valves, and emergency interconnections. The facility inventory will consist of a listing of facility characteristics necessary for hydraulic modeling. Carollo will meet with City operations staff for up to four hours to understand the current operations of the water system.

2.3 Water Facilities Condition Assessment (Optional Task)

The task will also consist of a one-day site visit by four Carollo staff consisting of our project engineer along with three discipline engineers (structural, mechanical, and electrical) to assess the condition of key tank, booster pump, and groundwater well sites. The purpose of the visit it to evaluate the existing condition of the facilities and to make recommendations for modifications and improvements at the facilities based on visual inspection. Observations will be documented in a brief memorandum along with field photos and captions.

2.4 Update Water GIS Database

Carollo will update the City's water system GIS database with new construction and modifications made to the water system since the GIS was last updated. Carollo has budgeted 40 hours for this task.

2.5 Update Existing Water Model

Carollo will update the existing water hydraulic model to current conditions. Carollo proposes converting the model to InfoWater. Based on information gathered in Task 2.2, Carollo will use the GIS to update the model with newly constructed pipelines and facilities. Pump curves will be updated in the model based on recent pump tests. Elevations will be added where needed. Demands will be allocated to the model based on billing data, distributing the demands based on the location of the customers.

2.6 Water Model Calibration (Optional Task)

Carollo will calibrate and validate the model results to field data. Carollo will observe City staff conduct up to 10 fire flow tests for model validation. SCADA output data from the City's SCADA system (flows, pressures, and tank levels) will be collected. It is assumed that all fire flow tests will be completed in one day. The information collected from the fire flow tests will be utilized to validate the static and residual pressures and determine the roughness coefficients (c-factors).

In addition, Carollo will use SCADA data and remote pressure loggers to calibrate and validate the model for extended period simulation (EPS). The data will be collected for one week, such that one day can be selected for model calibration and field data from another day in the same week can be used to validate the model results.

Carollo owns 15 remote pressure loggers that will be made available to the City to supplement the SCADA data for the Fire Flow and EPS calibration. As proven during Carollo's later water model calibration for the City in 2012, these additional telemetry points in the distribution system will greatly enhance the model calibration accuracy by providing comparison data points away from the system facilities. If SCADA data is not available, data from paper circle charts or other telemetry devices will be utilized in lieu of SCADA data. It is assumed that City staff will provide this non-electronic telemetry data in electronic (spreadsheet) format.

Model calibration and validation results will be presented at one of the progress meetings included in Task 1. Once the City approves that the model calibration results are satisfactory, Carollo will use the model to conduct hydraulic system analysis as part of Task 2.11.

2.7 Population Projections

To project populations, Carollo will collect information on planned rate of growth from the City and from Southern California Association of Governments (SCAG). The population projections will be overlaid in GIS using land use data, aerial photography, pressure zone, and sewershed boundaries. For the water and recycled water master plans, population projections will be tabulated by pressure zone. For the wastewater master plan, the population projections will be tabulated by sewershed area.

Additionally, vacant parcels and parcels with potential for redevelopment will be determined based on conversations with City staff. These will be used to determine the locations of potential growth within the City. The information used for the analysis will be based on the 2015 Urban Water Management Plan and the City's General Plan. The planning horizon for this IWWRMP is assumed to be year 2050.

2.8 Potable Water Demand Analysis and Forecast

Carollo will analyze the City's existing water demand using historical billing data, historical water production records from calendar year 2019, SCADA data from calibration day, and sewer flow generation rates, to calculate the following factors:

- Total water use factor in gallons per capita per day (gpcd)
- Residential water use factor (gpcd)
- Average indoor:outdoor demand ratio
- Unaccounted-for-Water (%)
- Peak Hour Demand (PHD) peaking factor
- Maximum Month Demand (MMD) peaking factor
- Maximum Day Demand (MDD) peaking factor
- Minimum Day Demand (MinDD) peaking factor

First, Carollo will project the City's water demand reduction of existing residential customers due new water conservation legislation (SB 606 and AB 1688) passed by the state of California in 2018 that mandates reducing the per capita indoor water use to 55 gpcd by 2025 and 50 gpcd by 2035. These duties factors will be developed in order to project future water demands.

Second, the population forecast from Task 2.7 will be used to project future water demands for year 2050 with and without the potential potable water demand offset due to the use of recycled water (from Task 2.9 and Task 2.12). For conservative planning purposes, the demand projection without recycled water will be used for all system analyses.

2.9 Recycled Water Demand Estimates

Our team will identify the top 20 potential recycled water customers within the City's service area by evaluating the historical billing records, land use map, specific plans, aerial maps, and previous planning documents. Customers will be categorized based on user type such as landscape irrigation and commercial user types. Additional pickup customers (> 5 afy) will be identified using the geocoded irrigation accounts of historical billing data.

The historical potable water billing records will be used as a starting point to estimate the recycled water demands of potential customers. Based on customer type, a recycled water percentage will be applied to account for the approximate amount of potable water demand that can be converted to recycled water for each customer class. A customer table and map will be created with the potential recycled water customer data (typically 10 AFY or larger).

Carollo will use typical industry peaking factors for MinDD, MMD, and MDD demand conditions by customer class to estimate existing, near-term, and long-term seasonal recycled water demands.

2.10 Future Water Supply Strategy

Carollo will first review data concerning existing and future imported water, recycled water, and groundwater recharge plans from USGMWD, Main Basin Watermaster, MWD, and neighboring water agencies (Pasadena, Glendale, etc.). Then, the existing water supply mix (year 2019), relevant historical trends, and existing water supply cost by source will be summarized and described. Water quality descriptions will be limited to summaries readily available in the City's most recent annual water quality report.

Second, future opportunities for changes in the City's water supply mix will be identified and summarized. This will include a description of:

- Upper District's Recycled Water storage and recovery program;
- Potential stormwater capture and groundwater recharge (from Task 3.3);
- Historical groundwater level changes in the Main Basin;
- Anticipated future trends in energy pricing;
- Partnership opportunities with neighboring water agencies; and
- Financial/grant opportunities

2.11 Hydraulic Water System Analysis

Carollo will use the hydraulic model to evaluate the water system under a variety of demand conditions. Due to the build out nature of South Pasadena, model runs will either be run under existing or year 2050 demand conditions. Due to the new water conservation mandates, the existing demand are expected to govern system hydraulics under most conditions. System pressures, velocities, ability to deliver fire flow, storage tank and booster pump capacities will be evaluated with the hydraulic model.

The model will be run under the following scenarios:

- Average Day Demands (ADD)
- Maximum Day Demands (MDD)
- MDD plus Fire Flows
- Minimum Day Demands (MinDD)

Up to four GIS maps will be prepared to display modeling results and depict the location of capacity deficiencies. The model will then be used to size system improvements that address these deficiencies. Up to two GIS maps will be prepared to display the location and sizing of CIP recommendations. Land use and vacant parcel information in GIS, General Plan information, and/or conversations with City staff will be used to allocate future demands.

2.12 Future Recycled Water Opportunities

Carollo will evaluate two potential sources of recycled water (PWP and Upper District) for the City. Based on the list of potential recycled water customers identified in Task 2.4, Carollo will identify a potential recycled water system for the City. The unit cost of up to five alignment alternatives (expressed in $/acre-foot) will be compared to the cost of other potential supplies as determined in Task 2.7. Carollo will make recommendations for the next steps in developing recycled water opportunities.

2.13 Water System Replacement Plan

Carollo will develop an age-based water system facility maintenance and pipeline replacement and rehabilitation (R&R) plan. Pipeline age and material will be used to prepare end of useful life estimates for the entire water distribution system using GIS analysis. Water facility age and conversations with City staff will be used to make recommendations for the timing of replacement and maintenance for tanks, groundwater wells, booster pump stations, and pipelines. If the City elects to include Optional Task 2.3 (Water Facilities Condition Assessment) in the base scope of services, this information will also be utilized to refine the prioritization of water facility maintenance and replacement recommendations.

2.14 Water Main Risk Assessment (Optional Task)

As part of this Optional Task, Carollo will utilize the Fracta Platform to develop a risk-based pipeline replacement program, rather than the age based method used for Task 2.14. Using this artificial intelligence tool to assess the risk and condition of drinking water distribution mains. The Fracta Platform consists of four (4) applications LOF, COF, BRE, and JP. LOF predicts the statistical probability that a water main will fail in next 1, 3, and 5 years. COF determines the consequence, or severity, of a failure and quantifies the direct and indirect costs of the failure using a Triple Bottom Line monetized approach. BRE is the product the LOF probability and COF monetization; it provides an objective criticality score in financial terms for engineers, planners and finance professionals to use to make fast, accurate and affordable asset management decisions. Job Planner (JP) is a tool that aids in the selection of projects ("jobs") enabling comparison of different jobs to determine the most cost-effective plan of action.

We recommended a phased approach to utilize this Platform to develop LoF scores in Phase 1 and then progress to develop CoF and BRE scores in Phase 2. Carollo will then consolidate the scoring into practical pipeline projects by grouping major sequential pipeline segments or neighborhood scale areas of pipelines as replacement projects. The average BRE scores of each pipeline group will then be utilized in the phase Water System CIP (see Task 2.16).

2.15 Water System CIP

Carollo will develop planning-level unit construction costs for infrastructure components. These unit costs will reflect the most current market conditions in the region. In addition, a table with typical contingency and mark-up cost factors will be prepared. The cost development and amortization assumptions will be discussed and finalized with City staff prior to the development of the CIPs.

Carollo will develop planning-level cost estimates for each project which will be summarized in tabular format by project ID, facility type and by type of customers served (existing, near-, and long-term).

We will phase all projects and develop a schedule to implement the improvements required for existing (year 2020), near-term (year 2025 or 2030) and long-term (year 2050) conditions. The timing of CIP projects will be determined based on the projected water or recycled water demands that the project is located or serves and/or other project triggers.

2.16 Water Model Training

Carollo will provide a one day training course to the City in the use of the water system hydraulic model. Training materials will be developed by Carollo and provided for the City's use.

Task 3 – Stormwater Master Plan

3.1 Background Data Review

Carollo will review and summarize the County's existing stormwater system drainage dataset that was utilized for the preparation of the ULAR EWMP.

3.2 Existing Stormwater Program and Projects

Carollo will review County's existing stormwater/drainage system data and the latest City's stormwater project concepts that are currently under development pursuant to the Los Angeles County MS4 Permit requirements. This review will include projects that are intended to benefit the City, but may be located either inside or outside the City Limits. Based on review of the ULAR EWMP, it is assumed that the total number of projects is assumed to not exceed 30, which include the 20 projects within the City boundary.

Carollo will develop a list of identified deficiencies for existing and future conditions and then will develop recommended projects based on the criteria established in the previous Task. Carollo will present the findings at one of the progress meetings to discuss the deficiencies and the proposed mitigation projects. Carollo will work with the City to discuss the initial round of projects and alternatives. No hydraulic modeling will be performed for the stormwater system.

3.3 Regional Stormwater Capture and Recharge

Carollo will review the ULAR EWMP and the Rio Hondo/San Gabriel River EWMP for stormwater capture and infiltration projects proposed within the City limits. In addition, Carollo will identify future regional stormwater capture projects in the Main Basin/Raymond Basin that can contribute to groundwater recharge. The amount of the stormwater capture and recharge will be estimated using planning level assumptions from the ULAR EWMP.

3.4 Develop Stormwater GIS

Carollo will develop a GIS-based file of existing drainage system and stormwater mitigation projects. As part of this task, Carollo will update the City's existing stormwater system GIS database with new construction and modifications made to the water system since the GIS was last updated. Carollo has budgeted up to 80 hours for this task.

3.5 Stormwater Project Benefit Analysis & Prioritization (Optional Task)

As described in our project approach, Carollo proposes to identify the associated benefits of the stormwater management projects identified in Tasks 3.2 and 3.3 using a qualitative scoring method. This method assigns high/medium/low benefit scores for each project for the following categories:

- Water quality
- Water supply
- Flood risk mitigation
- Climate change resiliency
- Habitat and ecosystem improvement
- Green and open space creation
- Heat island effect reduction

We will work with City staff to assign and confirm the benefit scores and then conduct a multi-benefit ranking process to prioritize the projects. The goal of this task is to focus the City's funding (from Measure W) on the projects that achieve the most benefits for the investment. This stormwater project prioritization will also be used for the Integrated CIP in Task 5.3.

Task 4 – Sewer System Master Plan and SSMP

4.1 Review Existing CCTV Inspection Data

Carollo will review the condition assessment index scoring of the recently completed citywide CCTV inspection of pipeline that have not been replaced during the major R&R effort of 2014-2017. As 60 percent of the sewer system was replaced during this time, it is assumed that this CCTV review will be limited to about 32 miles of the City's sewer collection system. In addition, pipeline material, age, history of repairs, as-built drawings, and other digital files of the city's sewer system will also be reviewed.

Using this information, Carollo will conduct a desk top analysis of the City's pipelines to determine high priority areas for new CCTV inspection and/or replacement. The desk top analysis will also consider risk factors such as proximity to waterways, high traffic corridors, or public impact associated with the likelihood and consequence of failure. Carollo will develop a list of phased inspection priorities as well as a GIS map that show the high/medium/low priority areas. Carollo will also provide the City with a GIS shapefile with attribute tables with proposed inspection phase.

4.2 Update Sewer System GIS

Carollo will update the City's sewer system GIS database with new construction and modifications made to the sewer system since the GIS was last updated. Carollo has budgeted 40 hours for this task.

4.3 Develop Sewer System Model

Carollo will create a hydraulic computer model of the City's sewer collection system and its two lift station facilities. The model will consist of the City's trunk pipelines and pump stations. Model pipe data will be updated from the City's GIS data. The data will be imported into the model and the pipe connectivity for all nodes will be confirmed. The model will include pipes 8 inches in diameter and greater, plus 6-inch diameter collector pipelines as needed to reach each basin. Lift stations, wet well dimensions, pump curves and pump controls will be added to the model. The flows will be added to the model geographically by mini-basin for the selected planning periods.

4.4 Sewer Model Calibration (Optional Task)

Carollo will calibrate the model based upon the flow monitoring data at 5 locations, and rainfall data provided by the City. Carollo's subconsultant V&A will install 5 flow meters for up to 4 weeks in duration to monitor flows in the City's sewer system. Carollo will use the data to determine base sanitary flows estimated from existing land use to dry weather flow calculated through the flow monitoring for each basin. Existing land use and currently served areas will be used to estimate flow factors in gallons per acre per land use category. The flow factors will be customized to match the observed existing Average Dry Weather Flow (ADWF) and will be used to develop flow projections. The fee estimate included in this proposal includes one month of flow monitoring and the associated traffic control (including the engineered TC plans for each site).

Carollo will calibrate the model to dry weather flow conditions. Flow monitoring data will provide custom hourly diurnal curves that establish the daily flow patterns for each metering basin. Model parameters will be adjusted, as needed, to best match the flow monitoring and SCADA data.

Carollo will calibrate the model for wet weather conditions, if there are any storm events during the time the flow monitoring occurs. Rainfall information will aid in developing the required rainfall-derived infiltration/inflow (RDII) estimations that enter the collection system during a storm event. It is recommended that the use of a single calibration period incorporating a number of independent rainfall events should be considered whenever possible. Model results will be reviewed and adjusted, as needed, to best match the flow monitoring, rainfall and SCADA data. Flow and depth will be verified during calibration.

The flows from any unmetered basins will be developed as best as possible using a mass balance between the available existing meters, pump SCADA data, and the flow meter, and proportioned as best as possible based on development type, age, pipe material, and extent of collection system components.

4.5 Sewer Flow Projections

Carollo will develop base sanitary flows for both near-term (year 2025 or 2030) and long-term (year 2050) conditions. First, the existing wastewater flow generation rates of residential customers will be adjusted to account for the anticipated reduction in indoor water use due to new water conservation mandates defined in SB 606 and AB 1688 (50 gpcd by 2035). This rate will also be used for any future residential customer wastewater flow estimates. Secondly, Carollo will estimate infiltration and inflow projections for each sewer basin, and the developed I/I flow rates will be compared to I/I flow rate estimates per monitored basin.

Future flows, including base flows and I/I will be projected based on unit flow factors for each land use or customer type and I/I assumptions. Future flows will be developed for each sewer and pump station basin for the near- and long-term planning periods.

4.6 Sewer System Hydraulic Analysis

Carollo will perform a hydraulic capacity analysis under the design storm for each basin using the calibrated model, and projected peak flow rates and system expansion developed in Task 4.5. The analysis will be performed for near- and long-term scenarios, and will assist in identifying any system deficiencies and improvements required to resolve deficiencies.

Carollo will develop future hydraulic modeling scenarios that evaluate the impact of wastewater flows under each of the planning periods. Maps will be developed showing current and future deficiencies. Develop infrastructure recommendations to resolve deficiencies.

Carollo will evaluate the capacities of the lift stations for their ability to convey peak flows under firm capacity for existing and build-out conditions. Develop lift station recommendations to resolve deficiencies. Improvements will be sized for meeting year 2050 conditions.

4.7 Sewer System CIP

Carollo will develop planning-level unit construction costs for infrastructure components. These unit costs will reflect the most current market conditions in the region. In addition, a table with typical contingency and mark-up cost factors will be prepared. The cost development and amortization assumptions will be discussed and finalized with City staff prior to the development of the CIPs.

Carollo will develop planning-level cost estimates for each project which will be summarized in tabular format by project ID, facility type and by type of customers served (existing, near-, and long-term).

Carollo will phase all projects and develop a schedule to implement the improvements required for existing, near-term (year 2025 or 2030) and long-term (year 2050) conditions. The timing of CIP projects will be determined based on the projected wastewater flows that the project is located or serves and/or other project triggers.

4.8 SSMP Update

Carollo will update the City's Sanitary Sewer Management Plan (SSMP) and include this as an appendix to the IWWRMP report. The SSMP will be in compliance with all regulatory requirements, and will consist of the following elements:

a) Organization Structure in charge of Sanitary Sewer Overflows (SSOs)

b) Legal Authority

c) Operation and Maintenance (O&M)

- Preventative Maintenance Program (including CCTV inspection & flushing frequencies), Operational Procedures, Owner vs. City responsibilities, etc.
- Capital rehabilitation and Replacement Program
- Recommended O&M Staffing and Equipment

d) Overflow Emergency Response Plan

e) Fats, Oils, and Grease (FOG) Control Program

f) Design and Performance Provisions.

g) System Evaluation and Capacity Assurances Plan (e.g. CIP)

h) Monitoring, Measurement, and Program Modifications

i) SSMP Program Audits

j) Communication Program

4.9 Sewer Model Training

Carollo will provide a one day training course to the City in the use of the water system hydraulic model. Training materials will be developed by Carollo and provided for the City's use.

4.10 SSMP Update Training

Carollo will provide a one day training course to City staff on updates made to the SSMP. It is assumed that this training will be planned on day consecutive to the sewer model training.

Task 5 – GIS System and CIP Integration

5.1 Integrated System GIS

Carollo will integrate the potable water, recycled water, stormwater, and wastewater system GIS files into a common platform (e.g. google earth or similar). The platform should be one that involves little-to-no license fee and ease of use for non-GIS/non-technical individuals, as well as allows for future expansion to include Pavement Management Information System (PMIS) and other municipal information layers. It is assumed that this task is limited to the compilation of previously developed GIS files and not exceed 50 hours.

5.2 GIS System Training

Provide one 4-hour training to City staff on the use/application of the integrated GIS system.

5.3 Integrated Master Plan CIP

Once the draft water, sewer, and recycled water CIPs are developed, they will be integrated into a single master CIP. Based on an overlay of the three CIPs, an integrated phasing plan will be developed that aligns project phasing to avoid the need to construct different types of pipeline in the same street in subsequent planning years or periods. This phasing realignment provides cost savings opportunities for the City and minimizes construction disruptions for residents.

Carollo will work closely with City staff to present the information in a practical and useful manner, so that the integrated CIP can be used as a road map for the City's current and future planning. This integrated CIP will be included in the IWWRMP report (Task 6). As part of this task, five (5) GIS maps will be prepared to display the water CIP, wastewater CIP, stormwater CIP, potential recycled water projects, and a combined CIP.

5.4 Strategic Financial Planning

Carollo will develop a financial plan that encompasses revenue sources and funding strategies for sustainable future CIP and on-going operational/maintenance requirements. The CIP financing will separate funding sources for capacity enhancement projects vs. maintenance/operation capital projects.

Task 6 – Integrated Water and Wastewater Resources Management Plan Report

Carollo will prepare portions of the draft chapters of the IWWRMP throughout the project. Interim work products will be presented at project meetings to gather input on the IWWRMP content while completing Tasks 1 through 5. The purpose of this IWWRMP task is to provide the City with a complete report for comprehensive review. Based on our experience, we propose to prepare three (3) versions to allow sufficient reviews and plan our schedule realistically. These three report versions are the Draft, Final Draft, and Final IWWRMP. Electronic and hard copy reports will be provided for each version as noted under the task deliverables.

6.1 Draft IWWRMP Report

Carollo will compile the work conducted in previous tasks into the Draft IWWRMP report that will summarize the assumptions, analysis criteria, report findings, and recommendations of the City's system facilities evaluations. Anticipated chapters of the comprehensive master plan include: 0) Executive Summary, 1) Introduction, 2) Land Use and Population Projections, 3) Potable Water Master Plan, 4) Recycled Water Master Plan, 5) Stormwater Master Plan, 6) Sewer System Master Plan, 7) Integrated Capital Improvement Plan, and 8) Integrated Financial Plan. In addition, appropriate Appendices, including the Sewer System Management Plan (SSMP) will be provided.

6.2 Final Draft IWWRMP Report

Carollo will incorporate one set of consolidated comments, preferably provided in electronic format using Track Changes in the word version of the report chapters supplemented by manual/electronic mark-ups on maps and figures. A meeting will be held during this process to make sure that comments are interpreted and addressed appropriately. Upon completion of addressing the City's comments, Carollo format, compile, and submit the Final Draft IWWRMP Report.

6.3 Final Draft IWWRMP Report

Carollo will incorporate one set of consolidated comments, preferably provided in electronic format using Track Changes in the word version of the report chapters supplemented by manual/electronic mark-ups on maps and figures. A meeting will be held during this process to make sure that comments are interpreted and addressed appropriately. Upon completion of addressing the City's comments, Carollo format, compile, and submit the Final IWWRMP Report.

Task Deliverables:

- Draft IWWRMP Report (3 hard copies + 1 electronic copy)
- Final Draft IWWRMP Report (3 hard copies + 1 electronic copy)
- Final IWWRMP Report (10 hard copies + 1 electronic copy)
- Electronic copies of all project text, databases, and graphics
- Electronic files of the water and sewer system hydraulic models
- Electronic GIS files of the water, sewer, and stormwater drainage systems.

OPTIONAL TASKS

A number of optional tasks have been suggested throughout this scope of work to enhance the project in various ways. These tasks are:

- Task 2.3 – Water Facility Condition Assessment
- Task 2.6 – Water Model Calibration
- Task 2.14 – Water Main Risk Assessment
- Task 3.5 – Stormwater Project Prioritization
- Task 4.4 – Sewer Model Calibration

We welcome the opportunity to discuss these ideas with City staff and help decide which of these optional tasks are most beneficial to meet the City's objectives for the IWWRMP.

MANAGEMENT PLAN AND APPROACH

Carollo has rigorous procedures for project management. These have been developed and refined throughout our eight-decade history and contribute to our responsiveness to our clients' needs. Key elements of our management approach include:

- Frequent comparison of planned-versus-actual budget and schedule
- Emphasis on communication with the client and within the project team
- Well-defined quality assurance and quality control procedures

These approaches are detailed in the following sections.

Developing, Tracking, and Maintaining a Realistic Budget and Schedule

Project Staffing Planning

Staffing is key to successful project management and an integral part of our quality management program. Our fundamental approach is to assemble the best-qualified team to match the project requirements. We then review the scope of the project and review staffing levels and budgets from similar projects to estimate labor requirements to complete a project.

A labor-hour estimate is made for each task in the Scope of Work. The estimate includes time for site visits and meetings, as well as actual engineering work for the project. We then use historical data, modified for project-specific requirements, to estimate the types of services and personnel classifications to complete each task.

We combine this staffing effort with our project planning, monitoring, and reporting procedures to verify that each project has adequate resources to meet the project schedule.

Establishing and Maintaining Schedules

Schedules are established by identifying project milestones and determining when each task must be completed to meet the milestone dates. The schedule is reviewed by the project's principal-in-charge (PIC) to determine staff requirements to complete the project on schedule. If a project is needed on a fast-track, more staff are assigned than for a project with a longer schedule. Our project manger and PIC work together to select additional resources to project when needed to meet the project schedule.

The project manager assesses the percent complete for the project on a monthly basis. The percent complete is estimated on a per task basis, in a defined manner, and is done independently of budget review. Budget status is not provided to the project manager until after the percent complete has been estimated.

The estimated percent complete is compared to the planned percent complete to determine if the project is on schedule. If the project is not on schedule, staffing adjustments or other corrective measures are implemented.

Monitoring Progress

To monitor project progress, the project labor-hour budget is fit to the project schedule to form an S-curve. The S-curve is a graphical illustration of the project plan, showing how the project will be completed on time and within the labor-hour budget.

Each month, the percent complete is plotted on the S-curve to compare actual project progress to planned progress. If the actual progress falls behind the planned progress, corrective measures are identified and implemented.

Monitoring Budgets

Each project manager has access to the labor hours charged to each job and can monitor project budget on a daily basis. Using the cumulative hours, percent of budget used is calculated and plotted on the project S-curve. The project manager can then assess the following:

- Are percent complete and percent budget expended close to the planned curve?
- Are percent complete and percent budget expended curves parallel, converging or diverging?
- Does the rate of progress match the budget expenditure rate?

Schedule and labor-hour budgets are established to provide sufficient resources to complete each aspect of a project. This is monitored monthly in relation to the progress of the project to allow early detection of potential budget or schedule problems.

Effective Communication

All communication on the project will go through Carollo's project manager, Inge Wiersema, in order to establish a single point of contact for the City. It will be Inge's duty to convey information to the design team and to keep the City appraised of project progress. In addition, Inge will work with the City to establish required project meetings and their frequency.

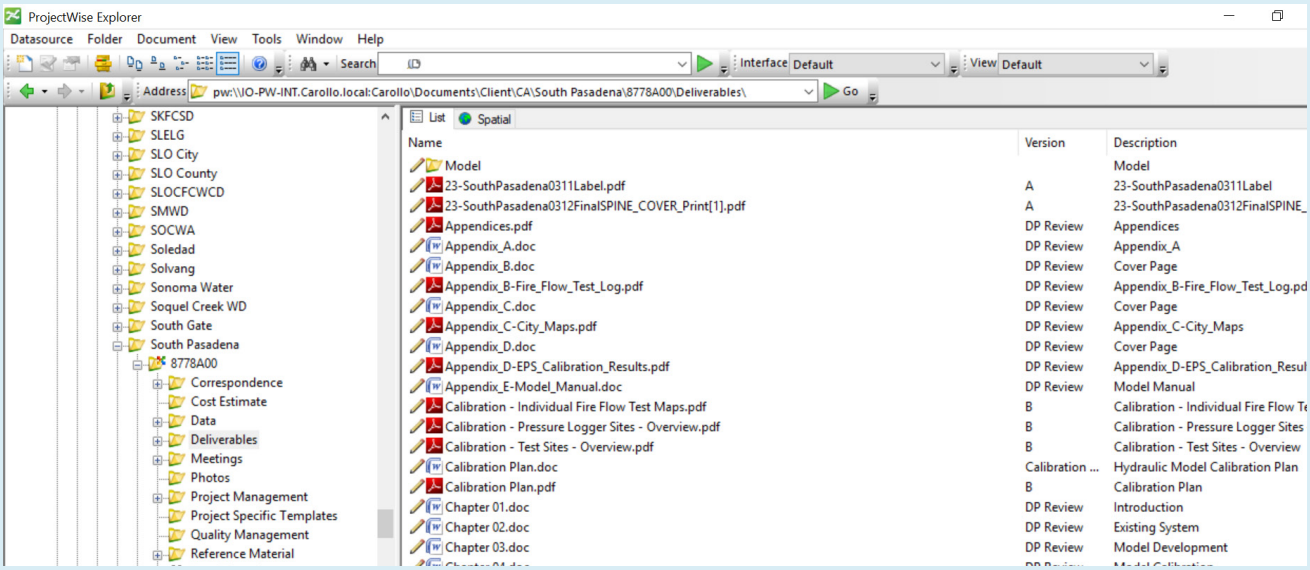
Our most direct way to communicate with you will be through in-person meetings/workshops and bi-weekly conference calls/webmeetings. Regular progress meetings will be scheduled. Inge will prepare an agenda and typically forward it one week in advance so that staff is made aware of the issues to be discussed and the people required to make the necessary decisions can be in attendance. Meeting notes are prepared for each meeting to document decisions made. Meeting notes will be distributed within three business days. Items documented in the meeting notes will include: attendees; meeting time, date, and location; record of discussion; project status; decisions made; action items; and outstanding issues.

We also anticipate meeting on a more frequent and informal basis with project team members as required to assist in the decision-making process. We schedule informal meetings through our project manager to maintain proper communication channels. These meetings can be in person or over the phone, whichever is more convenient for the City's Project Manager and staff.

Document Management

Carollo offers a project-specific management tool on the Internet. Updated daily by Carollo, this website allows your team members to keep track of the project's progress; review schedules, budgets, the latest technical findings, and decisions; and to post current information. In addition to being a useful tool for team communication and coordination, the website can access agendas, notes, draft and final reports, and other project materials. Since it is password protected, it can have technical information, detailed project and budget status reports, and team coordination information.

The website can also be accessed by City staff who may need updates on the project, but are not involved on a day-to-day basis. We have developed similar web pages on other projects and have found them useful for improving coordination and communication among the client, subconsultants, other agencies, and Carollo. In addition, we could create a second layer on the page that can be accessed by the general public. This page is used to supplement public involvement activities and keep the public informed of the project status, time and



Bentley® ProjectWise® is maintained by Carollo throughout the entire project and will include password-protected secure areas for client and project team members.

location of public meetings, and opportunities for public input into the construction. However, a project website and communications with the general public is currently not included in our scope of work or fee estimate.

Quality Assurance and Quality Control

Carollo had developed defined Quality Control Procedures. Our management team will prepare a Project Checklist that lists various project steps. This checklist guides the project team to identify the necessary quality management steps. The checklist helps confirm that the project follows our quality management procedures. Special requirements that can impact the project are identified. This can include special permits and regulatory approvals that could affect schedule, teaming arrangements, and project delivery issues.

Carollo has developed a number of design aid manuals and other Quality Control Tools. These manuals are maintained both as hard copies and on our intranet. These documents are regularly used on our projects to provide a consistent approach to quality management.

Next, a work plan is established to sequence the work effort, outlines when work needs to occur within the project schedule, schedules meeting times, identifies topics of discussion at the meetings, highlights key decisions to be made, and tracks the status of the project deliverables. In addition, a Project Management Plan (PMP) documents the lines of communication, overall schedule, project scope and budget, staffing plan, and any special requirements.

Projects receive a series of reviews at various project points as part of the Quality Control Procedures. These include a peer review of all draft report chapters, the compiled draft report, and the final IWWRMP report.

One of the most important elements of a quality management program is to prevent repetition of project problems. Prevention requires specific programs to implement solutions. Carollo has identified practice leaders by project type and by discipline. The practice leaders have the responsibility to keep abreast of application of current technologies. The practice leaders are a resource to planning and design engineers to provide advice and prevent problems before they occur. Training is a large part of our continuous improvement program. Construction feedback is provided to the design team so that design engineers and CADD operators learn how their designs work in the field.

Our approach will focus on quality throughout all phases to deliver a project that is correct, on time, on budget, achieves the scope, and meets or exceeds your expectations.

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Schedule

PROPOSED SCHEDULE

We have developed a preliminary project schedule based on our understanding of the scope of work. This schedule (shown on the next page) presents the major tasks, task duration, and key project milestones. The schedule is based on a contract award by City Council on November 6, 2019.

We have thoughtfully planned out the work effort described in the Scope of Work and are committed to deliver the final Integrated Water and Wastewater Resources Management Plan in approximately one year from the notice to proceed (NTP). We believe this schedule is achievable based on our current knowledge of the project and the availability of team members.

The following key assumptions were made when preparing this project schedule:

- Project kick-off meeting is held in the week of November 4, 2019.
- Face-to-face project meetings will occur monthly, supplemented by bi-weekly conference calls/ webmeetings to move the project along smoothly. Our project manager, Inge Wiersema, could attend these conference calls/webmeeting in-person as she is a resident of South Pasadena and lives only 5 minutes from the Garfield Reservoir office building.
- To expedite the data gathering process, Carollo will submit a prioritized data gathering list within 24 hours of the NTP.
- Preparation for field work to calibrate the water and sewer models will be accelerated early in the project, such that:
  - Fire flow testing for the water model calibration will take place early February; and
  - Flow monitoring for the sewer model calibration will take place during the month of February to maximize the chance of capturing wet weather event(s).
- The development of the water, sewer, and storm drain GIS systems are staggered to maintain a consistency between the database platforms and avoid redo work, which may be needed when developed in parallel.
- There will be two separate 2-week review rounds for the IWWRMP report to accommodate thorough reviews within the 1-year project timeline.
- Review times for City staff for other deliverables is assumed to be one week.
- Review comments will be consolidated in one version, using track changes in MS Word or a spreadsheet-based comment log.
- Training sessions for the models, SSMP, and integrated GIS system will take place near the end of the projects when the files are consistent with the final IWWRMP deliverables.

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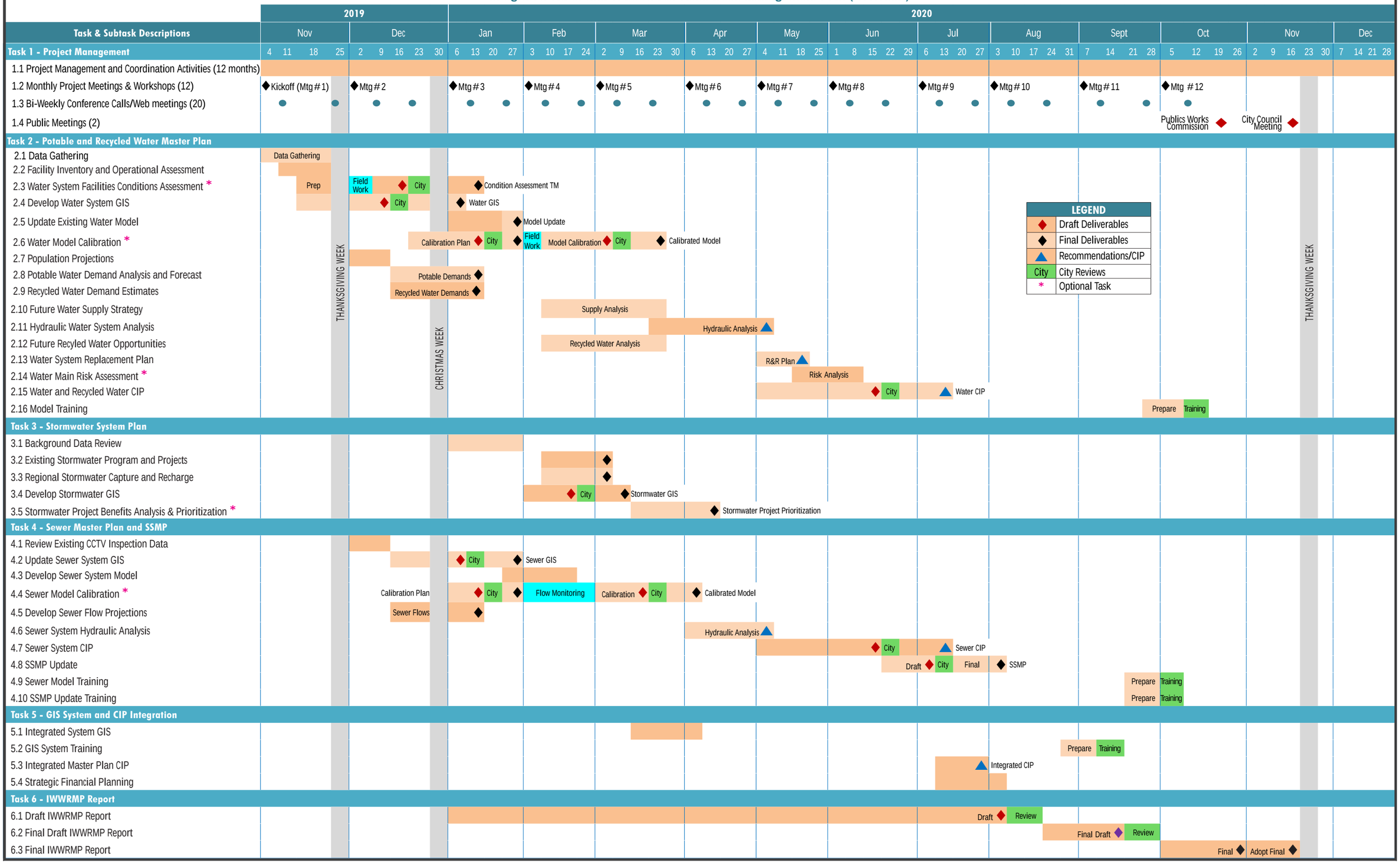
City of South Pasadena
Integrated Water and Wastewater Resources Management Plan (IWWRMP)



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Acceptance Statement

Carollo accepts all the terms and conditions outlined in the City's standard consultant services agreement, and can meet all insurance requirements made part of the agreement, unless otherwise stated in the proposal exceptions.

Inge Wiersema, PE

Vice President/Project Manager

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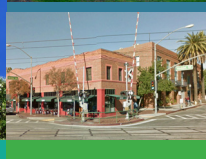
References



JUST ASK OUR CLIENTS

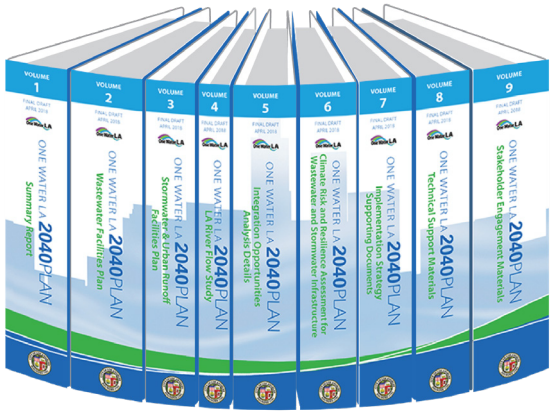
On the following pages we have included a selection of relevant project descriptions with references, as requested in the RFP. We encourage you to contact these references to verify the quality of our services on these similar projects. They can attest to the technical capabilities, management skills, work quality, and commitment to client service of our team members.

City of Los Angeles, CA

One Water LA 2040 Plan

The City of Los Angeles embarked on the One Water LA 2040 Plan to provide a strategic vision and implementation plan to manage all types of water resources as "One Water."

The Plan will ultimately guide the City with strategic and multi-billion dollar decisions for water infrastructure projects that will make LA a more water resilient and sustainable City. The Plan incorporates drastic changes in the water landscape with increased population, substantial reductions in wastewater flows due to water conservation, compliance with new stringent stormwater quality regulations, severe statewide drought, and increasing threats of climate change water supply reliability.



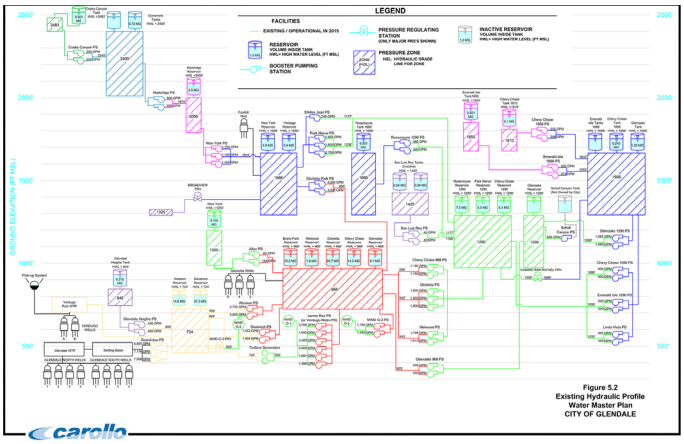
The Plan takes a holistic and collaborative approach, to consider all water resources from surface water, groundwater, potable water, graywater, wastewater, recycled water, and stormwater as "One Water." The plan identifies multi-departmental and multi-agency integration opportunities to manage water in a more efficient, cost effective, and sustainable manner.

Carollo led the effort, including directing stakeholder outreach and communications programs to engage more than 80 neighborhood councils; 15 council districts; and more than a dozen local, state, and federal agencies that represent the City's four million residents. The project involved 500+ stakeholders representing more than 200 organizations. We developed a cost-sharing framework among the network of various entities to secure plan support and funding, identifying the most optimal integration opportunities, and tapping stakeholder energy to achieve the One Water vision.

Reference	
Contact:	Ali Poosti Principal Civil Engineer 323-342-6228
Team Involvement:	Inge Wiersema; Gil Crozes; Matt Huang; Ryan Hejka; Jackie Silber; Bronwyn Kelly; David Baranowski; Aimee Zhao; Laura Southworth
Project Dates:	2015 - 2018

City of Glendale, CA

Water and Recycled Water Master Plan and Hydraulic Model Development



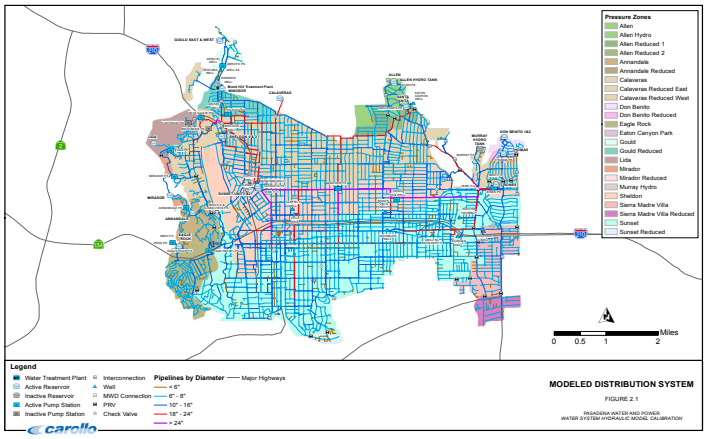
The City of Glendale is located approximately 7 miles northeast of downtown Los Angeles. The water system serves approximately 250,000 residents within a service area of 31 square miles. The system is relatively complex, with the potable and recycled water systems consisting of 397 miles of water mains, 33 reservoirs, 30 pump stations, 14 wells, 2 water treatment plants, 12 chlorination facilities, and 6 water quality monitoring stations. Water is pumped in stages from reservoirs in the lower (south end) into the higher (north end) zones. The service area is divided into seven major pressure zones. Due to the wide variation in service elevations, pumping stations are needed to lift water from the lower zone to the next higher elevation.

The City of Glendale Water and Power Department retained Carollo to develop their 2016 Water and Recycled Water Master Plan. The project included potable and recycled water demand forecasting, water supply analysis, hydraulic modeling, hydraulic system analysis, development of a pipeline replacement program, and a field condition assessment of critical water facilities. The findings of this project were used to develop a detailed CIP and master plan report with a 2040 planning horizon. A cursory financial rate impact study was also included as part of the project.

Reference	
Contact:	Raja Takidin Senior Civil Engineer 818-548-3906
Team Involvement:	Inge Wiersema; Ryan Hejka; Ryan Orgill; Gil Crozes; Aimee Zhao
Project Dates:	2015 - 2016

City of Pasadena, CA

Hydraulic Model Calibration



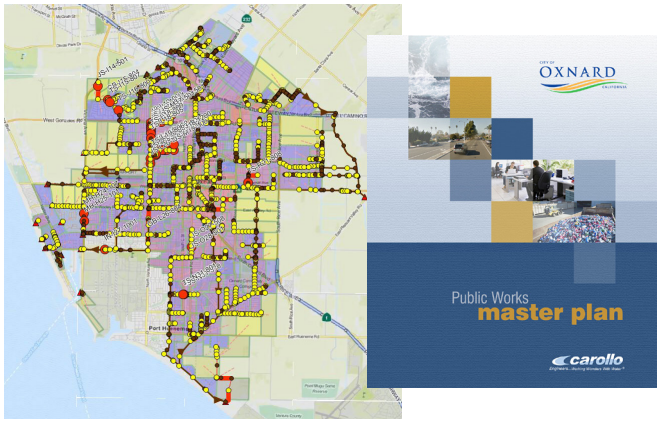
Pasadena Water and Power retained Carollo to review, update, and calibrate their hydraulic model in the latest InfoWater modeling software. Carollo received the model after the model typology was created, and performed a thorough quality assurance and quality control check on the model, identifying more than 90 errors in the model that needed to be fixed. After the errors were addressed, Carollo received the model back from PWP for calibration.

Carollo developed a detailed calibration plan for the model, conducting 20 fire hydrant tests and collecting all available data from SCADA (pump and well flows, reservoir levels, and system pressures). Carollo also provided 15 remote pressure loggers to measure system pressure over the course of a week. Using this information, Carollo developed seven diurnal curves for the system, selecting certain pressure zones where demand patterns could be identified separately. Carollo also investigated and input controls to create an extended period simulation model. Carollo calibrated the model for both fire flows and SCADA data. The calibrated model is currently being used by PWP staff to perform hydraulic evaluations of the water system.

Reference	
Contact:	Bradley Boman Engineering Manager - Water Services Division 626-744-4278
Team Involvement:	Inge Wiersema; Matt Huang; Gil Crozes; Ryan Hejka; Ryan Orgill; Aimee Zhao
Project Dates:	2016 - 2017

City of Oxnard, CA

Public Works Integrated Master Plan



Carollo prepared the City of Oxnard's Public Works Integrated Master Plan, which included master plans for the City's water, sewer collection, recycled water, and stormwater systems, as well as condition assessments, financial planning, CEQA, and a cost-of-service study. The purpose of the IMP was to establish a utility infrastructure road map that improves performance, minimizes costs, and sets the long-term direction of Oxnard's utilities for decades to come.

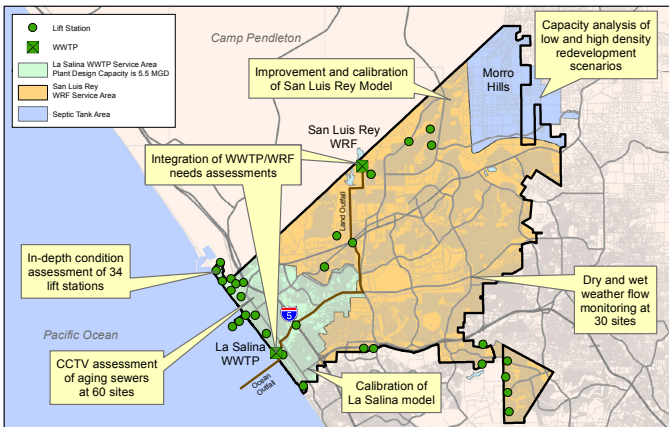
The Plan coordinates the need and timing of planned water utility facilities as related to the elements and projections in the City's 2030 General Plan, with a forward projection through 2040.

The Integrated Master Plan effort included cost-of-service studies, and developing master plans for water, wastewater, stormwater, and recycled water, including a proposed aquifer storage and recovery (ASR) program. Asset condition, hydraulic modeling of the water, recycled water, sewer collection, and stormwater drainage systems. These models were used to perform capacity evaluations for all systems. A comprehensive CIP was developed to prioritize expenditures across all service lines.

Reference	
Contact:	Thien Ng Deputy Director of Public Works 805-432-3575
Team Involvement:	Inge Wiersema; Ryan Orgill; Aimee Zhao; Ryan Hejka; David Baranowski; V&A Consulting
Project Dates:	2014 - 2017

City of Oceanside

Integrated Water, Wastewater, and Recycled Water Master Plan



Carollo prepared the City of Oceanside's Water, Sewer, and Recycled Water Master Plans, which account for proposed updates, improvements, and expansions to the water and sewer systems and facilities with a planning horizon of year 2050. The master plan updates also account for land use changes, recent facility upgrades, new population projections, changes in regulatory environment, and a recently completed rehabilitation needs assessment for the City's water and wastewater treatment facilities.

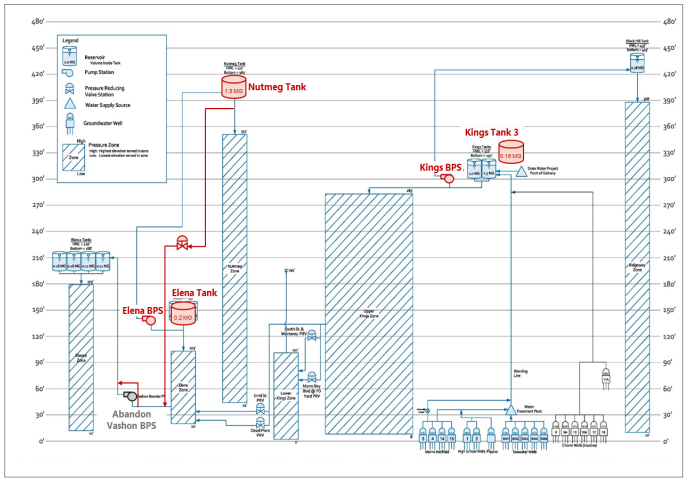
The purpose of this project was to develop a new set of plans to serve as an accurate roadmap of which projects to implement and when. The project included updates and calibration of the water and sewer hydraulic models, construction of a new recycled water model, demand forecasting, sewer flow projections, water and sewer distribution system evaluation, and development of two separate recycled water system layouts based on different supply locations and customer market assessment. The wastewater flow monitoring data was used to calibrate the hydraulic models, which were then used to conduct complete capacity assessments. In addition, the conditions of 60 sewer segments were inspected using CCTV and the City's sewer system management plan was updated.

System analyses included hydraulic modeling analysis, facility capacity analysis, and extensive condition assessment of all major water and sewer facilities to prepare a comprehensive CIP through year 2050.

Reference	
Contact:	Cari Dale Water Utilities Department Director 760-435-5827
Team Involvement:	Inge Wiersema; Tim Loper; Ryan Orgill; Ryan Hejka; Aimee Zhao
Project Dates:	2015 - 2016

City of Morro Bay, CA

OneWater Morro Bay Integrated Master Plan



The City of Morro Bay contracted with Carollo to develop a OneWater Plan that evaluated the water, wastewater, and stormwater systems, as well as conducting a supply resiliency evaluation.

The project scope included development of hydraulic models of all three utility systems, including demand allocation, wastewater flow loading, peaking factors, and peak wet weather flow development. The water system model was calibrated to an extended period simulation using SCADA data, and data from temporary pressure loggers. The wastewater model was calibrated to flow monitoring data collected at multiple locations in the collection system as well as influent data at the wastewater treatment plant.

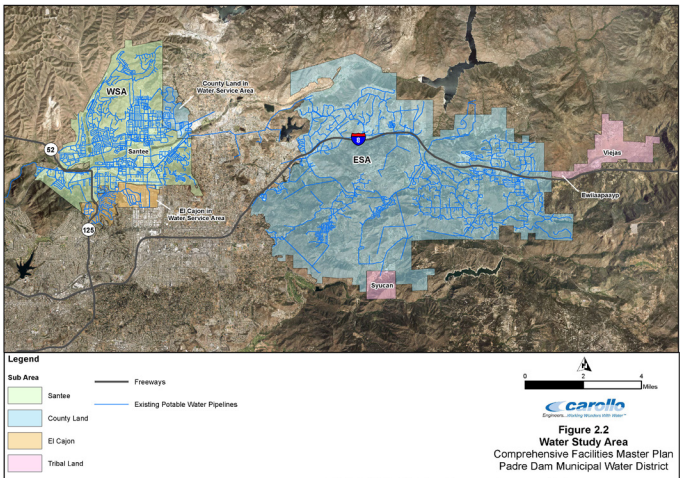
A significant project effort included an analysis of the City's water supply sources, including groundwater, surface water from the state water project, desalination sources, as well as recycled and indirect potable water source options. Carollo helped the City make a decision on the most resilient and cost effective source options for the future.

The project included a stakeholder involvement component where Carollo made presentations to the City Council and the Public Works Advisory Board. Through this work, Carollo was hired to assist the City in implementing the programmatic recommendations over the course of the next five years.

Reference	
Contact:	Rob Livick Public Works Director 805-772-6261
Team Involvement:	Tim Loper; Inge Wiersema; Ryan Orgill; Jackie Silber; Ryan Hejka; Matt Huang; V&A Consulting
Project Dates:	2017 - 2018

Padre Dam Municipal Water District, CA

Comprehensive Facilities Master Plan



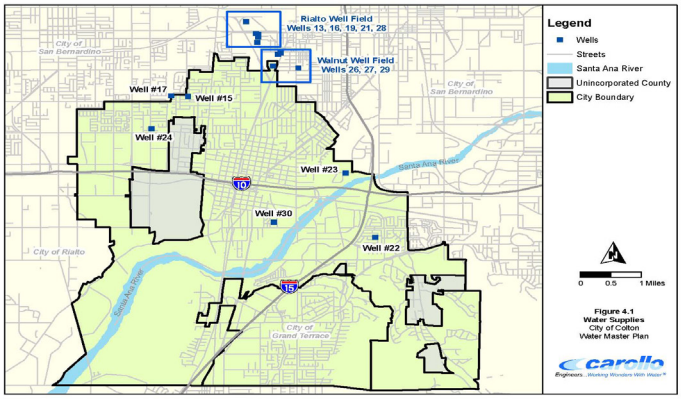
Carollo was hired by the Padre Dam Municipal Water District to update its 2001 Integrated Facilities Plan (IFP) to identify water, wastewater, and recycled water improvement needs within the District's extensive service area through 2020. Since the completion of this IFP, significant changes have occurred within the District's service area with respect to water use and wastewater flows. A key change that impacts the timing and sizing of infrastructure improvements is the general reduction in per capita water use and wastewater flows due to water conservation efforts, water scarcity awareness, and the economic downturn that occurred after 2007. The updated master plans provide accurate and usable documents that can guide the District with budgeting and implementation of capital improvement projects for the next two decades.

Other project elements include developing (recycled) water demand/sewer flows forecasting, water supply analysis, hydraulic models updates for the water and recycled water systems, creation and calibration of a new sewer system model, and field condition assessment of key facilities. In addition, the feasibility of the wastewater plant expansion for an indirect potable reuse project was evaluated. The proposed recommendations that were identified based on the water, wastewater collection, and recycled water system analysis were combined in a comprehensive CIP and water master plan report.

References	
Contact:	Mark Niemiec Manager of District Projects 619-258-4766
Team Involvement:	Inge Wiersema; Tim Loper; Ryan Hejka; Ryan Orgill; Aimee Zhao
Project Dates:	2014

City of Colton, CA

Water and Wastewater System Master Plan Update and Condition Assessment



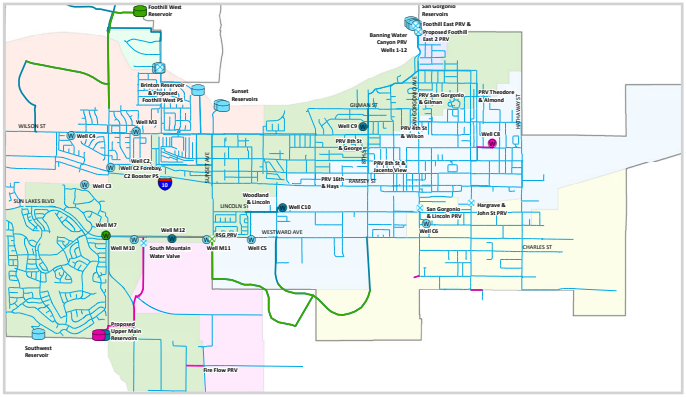
Carollo prepared an update to the City of Colton's Water System Master Plan (WMP), which is part of a larger effort to produce an Integrated Water Master Plan for its water and sewer systems. The City's previous WMP was completed in 1997 and presented projected water requirements and system improvements for the existing systems at the time. The cost estimate for the recommended improvements of the existing system and construction of new equipment was approximately $40 million. As the previous master plan was well over five years old, the City decided to update it and develop a new integrated and phased plan that prioritizes necessary water infrastructure improvements for future conditions.

The purpose of this Water Master Plan is to update the previous plan and aid the City in planning, development, and financing of water system facilities to provide reliable and enhanced service for existing customers and to serve anticipated land use changes and growth. This WMP has a planning horizon of year 2040 and considers existing conditions, as well as future plans presented in the City's General Plan. Where available, specific development plans have been considered. The objective of this WMP is to serve as a strategic planning guide for City staff to make decisions and justify the need for improvements to the City's water systems.

Reference	
Contact:	Mike Corey Water Utility Manager 909-370-6101
Team Involvement:	Inge Wiersema; Tim Loper; Ryan Hejka; Aimee Zhao; Matt Huang; Ryan Orgill; David Baranowski
Project Dates:	2013 - 2015

City of Banning, CA

2017 Integrated Master Plan



The City retained Carollo to update their water, sewer, and recycled water master plans into an integrated master plan to guide the City with the budgeting and implementation of the CIPs. The City has several large vacant parcel areas that can accommodate substantial growth. Population, demand, and flow forecasts were developed at the beginning of the project. Three separate hydraulic models were created for the potable water, recycled water, and wastewater collection systems in Innovyze's InfoWater and InfoSWMM modeling software.

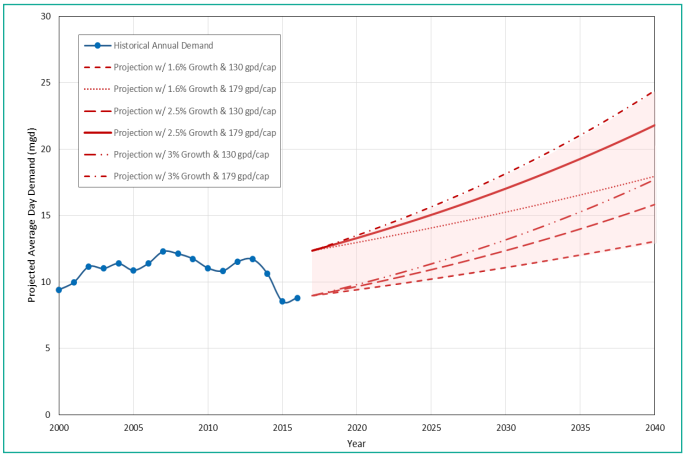
The potable water and wastewater models were calibrated with field data. The models were used to size both existing and future system improvements. The recycled water master plan analyzed both expansion of the purple pipe network to serve non-potable demands, as well as an evaluation of three indirect potable reuse (IPR) options involving various spreading basin locations. A hybrid strategy was recommended to achieve 100 percent reuse of wastewater effluent during the entire year.

The recommended potable water, recycled water, and wastewater projects were combined in a comprehensive CIP. In addition to a traditional written master plan report, a dynamic CIP tool was developed that allows the City to quickly update the timing, sizing, or cost of projects after the completion of the master plan. This dynamic CIP tool supports the City with annual budgeting and provides the City with an up-to-date CIP at all times.

Reference	
Contact:	Arturo Vela Senior Civil Engineer 951-922-3130
Team Involvement:	Inge Wiersema; Matt Huang; Ryan Orgill; Ryan Hejka; Jackie Silber; David Baranowski; Aimee Zhao
Project Dates:	2016 - 2018

City of Porterville, CA

Integrated Master Plan



The City of Porterville contracted with Carollo to develop an integrated master plan for water, wastewater, and storm drainage. The wastewater element also included an evaluation of the condition of the wastewater treatment plant. Carollo conducted a water demand analysis by looking at historical water production and consumption data as well as conducting an evaluation of per capita consumption.

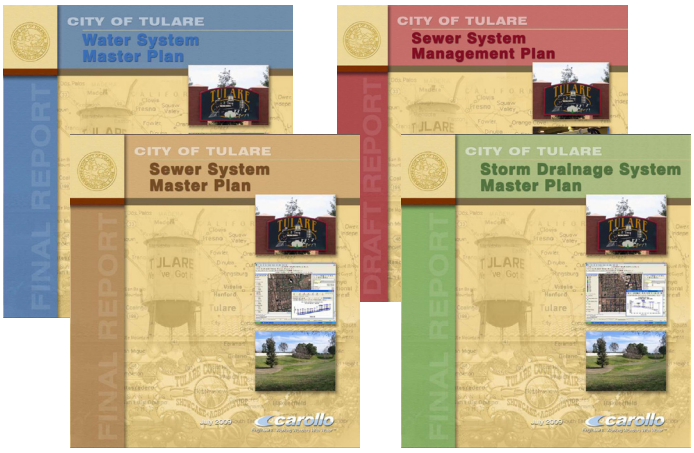
Carollo conducted an evaluation of the City's surface water rights and allocations to determine if surface water treatment was an option for potential future supply shortages. Carollo developed a range of water demand projections for buildout of the City's General Plan boundary. Carollo also developed wastewater flow projections and conducted a temporary flow monitoring program to evaluate existing base flows to be used in the development of the flow projections and hydraulic model allocation.

Carollo constructed and calibrated hydraulic computer models of the water, wastewater and storm drain systems and conducted analysis of existing system capacity and their ability to serve future growth. The water model was constructed in InfoWater, and the storm drain and wastewater models were constructed in InfoSWMM. Carollo used the models to develop recommended projects to mitigate existing deficiencies and serve future growth. Carollo evaluated multiple alternatives and helped the City prioritize options for capital project implementation.

Reference	
Contact:	Mike Reed Public Works Director 559-782-7420
Team Involvement:	Tim Loper; Ryan Orgill; Jackie Silber; David Baranowski
Project Dates:	2017 - 2018

City of Tulare

Water, Sewer, and Storm Drain Master Plans and Sewer System Management Plan



Tulare's master plans involved background review, mapping and hydraulic model selection, develop-ment of design standards and planning criteria, hydraulic modeling, systems evaluation, and opera-tional enhancements.

Carollo conducted flow monitoring throughout the collection system and constructed three hydraulic models. Carollo worked closely with the City to develop evaluation criteria that worked with the City's current budget constraints. The criteria was truth testing with City staff and the water, wastewa-ter, and storm drain hydraulic models were used to evaluate the performance of each system. The mod-els were also used to develop projects to serve the City's buildout land use from the updated General Plan.

Carollo developed projects to mitigate existing defi-ciencies and serve future growth. The projects were prioritized into a comprehensive capital improve-ment plan that allocated funds to existing rate pay-ers and future development. The project included close coordination with outside stakeholders such as the Tulare Irrigation District, Building Industry Association, industrial users and City Council.

References	
Contact:	Michael Miller City Engineer 559-684-4210
Team Involvement:	Tim Loper; Ryan Orgill; V&A Consulting
Project Dates:	2008

Proposal Exceptions

EXCEPTIONS

We have reviewed the City's standard consultant services agreement for the Integrated Water and Wastewater Resources Management Plan and would like to propose the same modifications/additions for your consideration as were accepted and included in our last contract with the City of South Pasadena for the On-Call Modeling project.

New Section 5.12:

"5.12. Estimates and Projections. Consultant has no control over the cost of labor, materials, equipment or services furnished by others, over the incoming water and/or wastewater quality and/or quantity, or over the way City's plants and/or associated processes are operated and/or maintained. Data projections and estimates are based on Consultant's opinion based on experience and judgment. Consultant cannot and does not guarantee that actual costs and/or quantities realized will not vary from the data projections and estimates prepared by Consultant and Consultant will not be liable to and/or indemnify City and/or any third party related to any inconsistencies between Consultant's data projections and estimates and actual costs and/or quantities realized by City and/or any third party in the future, except to the extent such inconsistencies are caused by Consultant's negligent performance hereunder."

Section 11.2:

- Starting in the 3rd line, replace "arising out of or in connection with" with "to the extent caused by."
- In the 5th line, insert "intentionally" before "wrongful acts."

Section 11.5:

Add the following language to the end of the paragraph:

"Notwithstanding the foregoing, in the event the subject action alleges negligence on the part of Consultant and/or City, or any third party not under contract with Consultant, Consultant's obligations regarding City's defense under this section include only the reimbursement of City's reasonable defense costs incurred to the extent of Consultant's negligence as expressly determined by a final judgment, arbitration, award, order, settlement, or other final resolution

New Section 11.9:

"11.9 Limitations. Consultant shall not be responsible for warranties, guarantees, fitness for a particular purpose, breach of fiduciary duty, loss of anticipated profits or for economic, incidental or consequential damages to City or any third party arising out of breach of contract, termination, or for any other reason whatsoever. Additionally, Consultant shall not be responsible for acts and decisions of third parties, including governmental agencies, other than Consultant's subconsultants, that impact project completion and/or success."

Section 12.11:

We request that the words "material change" be replaced with "limit reduction."

Section 13.1:

Add the following to the end of the last sentence: ", which Consultant shall be entitled to use and rely upon."

Section 18.5:

Add the following to the end of the paragraph:

"The services to be performed by Consultant are intended solely for the benefit of City. No person or entity not a signatory to this Agreement shall be entitled to rely on Consultant's performance of its services hereunder, and no right to assert a claim against Consultant by assignment of indemnity rights or otherwise shall accrue to a third party as a result of this Agreement or the performance of Consultant's services hereunder."

ADDENDA

Carollo acknowledges receipt of Addendum No. 1 issued on September 24, 2019. A copy of the signed addendum is located on the following pages.

September 24, 2019

ADDENDUM NO. 1

REQUEST FOR PROPOSALS FOR INTEGRATED WATER AND WASTEWATER RESOURCES MANAGEMENT PLAN

The proposal submittal time, date and location will remain as follows:

> September 30, 2019 at 4:00 p.m. at the Public Works Department located on the first floor of City Hall at 1414 Mission Street, South Pasadena, CA 91030.

Response to Requests for Information:

Q1) "Are you looking for a list in Section 2 with reference information, then similar project descriptions complete with reference information in Section 9?"

A1) Yes. Section 2, Firm's Experience and References requires a list of similar projects whereas Section 9, References requests a minimum of three (3) references information.

Q2) "We request that the deadline for submittals be extended by two weeks to October 14th?"

A2) All proposals must be submitted no later than 4:00 p.m. on September 30, 2019. Proposals received after the deadline will not be considered and the deadline cannot be changed.

Q3) "Is Geographic Information System (GIS) data available for the City's water and sewer system?"

A3) Yes. The GIS layers for the City's water and sewer are available.

Q3) "Is updating the City's existing water model (conversion to the latest InfoWater) or recalibration/validation of the model is optional?"

A3) No. The update of the City's existing water model will be required as a part of this project.

Q4) "What is the budget for the City's Integrated Water and Wastewater Resources Management Plan (IWWRMP)?"

A4) All proposals will be reviewed based on the firm's capability to provide most optimal services to the City, not based on the lowest fee proposal.

ADDENDUM NO. 1

REQUEST FOR PROPOSALS FOR INTEGRATED WATER AND WASTEWATER RESOURCES MANAGEMENT PLAN

This form shall be submitted with your proposal documents.

ACKNOWLEDGMENT OF RECEIPT

Firm: Carollo Engineers, Inc.

Proposer's Signature: Wiersema

Proposer's Name (Print/Type): Inge Wiersema, Vice President

Proposer's Address: 707 Wilshire Blvd, Suite 3920

Los Angeles, CA 90017

(This form must be submitted with the proposal)

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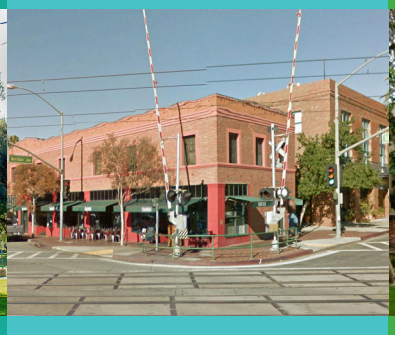
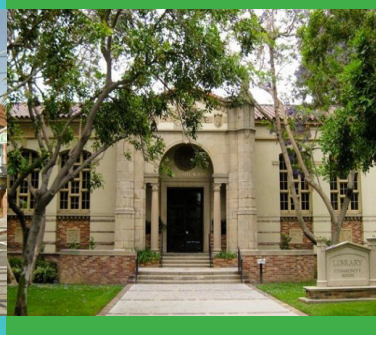




Engineers...*Working Wonders With Water®*

ATTACHMENT 2

Professional Service Agreement with Carollo

PROFESSIONAL SERVICES AGREEMENT
FOR CONSULTANT SERVICES

(City of South Pasadena / Carollo Engineers, Inc.)

1. IDENTIFICATION

This PROFESSIONAL SERVICES AGREEMENT ("Agreement") is entered into by and between the City of South Pasadena, a California municipal corporation ("City"), and Carollo Engineers, Inc. ("Consultant").

2. RECITALS

2.1. City has determined that it requires the following professional services from a consultant: **Preparation of Integrated Water and Wastewater Resources Management Plan**.

2.2. Consultant represents that it is fully qualified to perform such professional services by virtue of its experience and the training, education and expertise of its principals and employees. Consultant further represents that it is willing to accept responsibility for performing such services in accordance with the terms and conditions set forth in this Agreement.

2.3. Consultant represents that it has no known relationships with third parties, City Council members, or employees of City which would (1) present a conflict of interest with the rendering of services under this Agreement under Government Code Section 1090, the Political Reform Act (Government Code Section 81000 *et seq.*), or other applicable law, (2) prevent Consultant from performing the terms of this Agreement, or (3) present a significant opportunity for the disclosure of confidential information.

NOW, THEREFORE, for and in consideration of the mutual covenants and conditions herein contained, City and Consultant agree as follows:

3. DEFINITIONS

3.1. "Scope of Services": Such professional services as are set forth in Consultant's proposal dated September 30, 2019 to City attached hereto as Exhibit A and incorporated herein by this reference.

3.2. "Agreement Administrator": The Agreement Administrator for this project is **Julian Lee, Deputy Public Works Director**. The Agreement Administrator shall be the principal point of contact at the City for this project. All services under this Agreement shall be performed at the request of the Agreement Administrator. The Agreement Administrator will establish the timetable for completion of services and any interim milestones. City reserves the right to change this designation upon written notice to Consultant

3.3. "Approved Fee Schedule": Consultant's compensation rates are set forth in the fee schedule attached hereto as Exhibit B and incorporated herein by this reference. This fee schedule shall remain in effect for the duration of this Agreement unless modified in writing by mutual agreement of the parties.

3.4. "Maximum Amount": The highest total compensation and costs payable to Consultant by City under this Agreement. The Maximum Amount under this Agreement is **Five Hundred Twenty-Six Thousand Seven Hundred Twenty-Three Dollars ($526,723)**.

3.5. "Commencement Date": **January 1, 2020**

3.6. "Termination Date": **December 31, 2021**

4. TERM

The term of this Agreement shall commence at 12:00 a.m. on the Commencement Date and shall expire at 11:59 p.m. on the Termination Date unless extended by written agreement of the parties or terminated earlier under Section 18 ("Termination") below. Consultant may request extensions of time to perform the services required hereunder. Such extensions shall be effective if authorized in advance by City in writing and incorporated in written amendments to this Agreement.

5. CONSULTANT'S DUTIES

5.1. **Services**. Consultant shall perform the services identified in the Scope of Services. City shall have the right to request, in writing, changes in the Scope of Services. Any such changes mutually agreed upon by the parties, and any corresponding increase or decrease in compensation, shall be incorporated by written amendment to this Agreement.

5.2. **Coordination with City**. In performing services under this Agreement, Consultant shall coordinate all contact with City through its Agreement Administrator.

5.3. **Budgetary Notification**. Consultant shall notify the Agreement Administrator, in writing, when fees and expenses incurred under this Agreement have reached eighty percent (80%) of the Maximum Amount. Consultant shall concurrently inform the Agreement Administrator, in writing, of Consultant's estimate of total expenditures required to complete its current assignments before proceeding, when the remaining work on such assignments would exceed the Maximum Amount.

5.4. **Business License.** Consultant shall obtain and maintain in force a City business license for the duration of this Agreement.

5.5. **Professional Standards.** Consultant shall perform all work to the standards of Consultant's profession and in a manner reasonably satisfactory to City. Consultant

shall keep itself fully informed of and in compliance with all local, state, and federal laws, rules, and regulations in any manner affecting the performance of this Agreement, including all Cal/OSHA requirements, the conflict of interest provisions of Government Code § 1090 and the Political Reform Act (Government Code § 81000 et seq.).

5.6. **Avoid Conflicts.** During the term of this Agreement, Consultant shall not perform any work for another person or entity for whom Consultant was not working at the Commencement Date if such work would present a conflict interfering with performance under this Agreement. However, City may consent in writing to Consultant's performance of such work.

5.7. **Appropriate Personnel.** Consultant has, or will secure at its own expense, all personnel required to perform the services identified in the Scope of Services. All such services shall be performed by Consultant or under its supervision, and all personnel engaged in the work shall be qualified to perform such services. **Inge Wiersema, Chief of Water Resources** shall be Consultant's project administrator and shall have direct responsibility for management of Consultant's performance under this Agreement. No change shall be made in Consultant's project administrator without City's prior written consent.

5.8. **Substitution of Personnel.** Any persons named in the proposal or Scope of Services constitutes a promise to the City that those persons will perform and coordinate their respective services under this Agreement. Should one or more of such personnel become unavailable, Consultant may substitute other personnel of at least equal competence upon written approval of City. If City and Consultant cannot agree as to the substitution of key personnel, City may terminate this Agreement for cause.

5.9. **Permits and Approvals.** Consultant shall obtain, at its sole cost and expense, all permits and regulatory approvals necessary for Consultant's performance of this Agreement. This includes, but shall not be limited to, professional licenses, encroachment permits and building and safety permits and inspections.

5.10. **Notification of Organizational Changes.** Consultant shall notify the Agreement Administrator, in writing, of any change in name, ownership or control of Consultant's firm or of any subcontractor. Change of ownership or control of Consultant's firm may require an amendment to this Agreement.

5.11. **Records.** Consultant shall maintain any and all ledgers, books of account, invoices, vouchers, canceled checks, and other records or documents evidencing or relating to charges for services or expenditures and disbursements charged to City under this Agreement for a minimum of three (3) years, or for any longer period required by law, from the date of final payment to Consultant under this Agreement. All such documents shall be made available for inspection, audit, and/or copying at any time during regular business hours, upon oral or written request of City. In addition, pursuant to Government Code Section 8546.7, if the amount of public funds expended under this

Agreement exceeds ten thousand dollars, all such documents and this Agreement shall be subject to the examination and audit of the State Auditor, at the request of City or as part of any audit of City, for a period of three (3) years after final payment under this Agreement.

6. SUBCONTRACTING

6.1. **General Prohibition.** This Agreement covers professional services of a specific and unique nature. Except as otherwise provided herein, Consultant shall not assign or transfer its interest in this Agreement or subcontract any services to be performed without amending this Agreement.

6.2. **Consultant Responsible.** Consultant shall be responsible to City for all services to be performed under this Agreement.

6.3. **Identification in Fee Schedule.** All subcontractors shall be specifically listed and their billing rates identified in the Approved Fee Schedule, Exhibit B. Any changes must be approved by the Agreement Administrator in writing as an amendment to this Agreement.

6.4. **Compensation for Subcontractors.** City shall pay Consultant for work performed by its subcontractors, if any, only at Consultant's actual cost plus an approved mark-up as set forth in the Approved Fee Schedule, Exhibit B. Consultant shall be liable and accountable for any and all payments, compensation, and federal and state taxes to all subcontractors performing services under this Agreement. City shall not be liable for any payment, compensation, or federal and state taxes for any subcontractors.

7. COMPENSATION

7.1. **General.** City agrees to compensate Consultant for the services provided under this Agreement, and Consultant agrees to accept payment in accordance with the Fee Schedule in full satisfaction for such services. Compensation shall not exceed the Maximum Amount. Consultant shall not be reimbursed for any expenses unless provided for in this Agreement or authorized in writing by City in advance.

7.2. **Invoices.** Consultant shall submit to City an invoice, on a monthly basis or as otherwise agreed to by the Agreement Administrator, for services performed pursuant to this Agreement. Each invoice shall identify the Maximum Amount, the services rendered during the billing period, the amount due for the invoice, and the total amount previously invoiced. All labor charges shall be itemized by employee name and classification/position with the firm, the corresponding hourly rate, the hours worked, a description of each labor charge, and the total amount due for labor charges.

7.3. **Taxes.** City shall not withhold applicable taxes or other payroll deductions from payments made to Consultant except as otherwise required by law. Consultant shall be solely responsible for calculating, withholding, and paying all taxes.

7.4. **Disputes.** The parties agree to meet and confer at mutually agreeable times to resolve any disputed amounts contained in an invoice submitted by Consultant.

7.5. **Additional Work.** Consultant shall not be reimbursed for any expenses incurred for work performed outside the Scope of Services unless prior written approval is given by the City through a fully executed written amendment. Consultant shall not undertake any such work without prior written approval of the City.

7.6. **City Satisfaction as Precondition to Payment.** Notwithstanding any other terms of this Agreement, no payments shall be made to Consultant until City is satisfied that the services are satisfactory.

7.7. **Right to Withhold Payments.** If Consultant fails to provide a deposit or promptly satisfy an indemnity obligation described in Section 11, City shall have the right to withhold payments under this Agreement to offset that amount.

8. PREVAILING WAGES

Consultant is aware of the requirements of California Labor Code Section 1720, et seq., and 1770, et seq., as well as California Code of Regulations, Title 8, Section 16000, et seq., ("Prevailing Wage Laws"), which require the payment of prevailing wage rates and the performance of other requirements on certain "public works" and "maintenance" projects. Consultant shall defend, indemnify, and hold the City, tis elected officials, officers, employees, and agents free and harmless form any claim or liability arising out of any failure or alleged failure of Consultant to comply with the Prevailing Wage Laws.

9. OWNERSHIP OF WRITTEN PRODUCTS

All reports, documents or other written material ("written products" herein) developed by Consultant in the performance of this Agreement shall be and remain the property of City without restriction or limitation upon its use or dissemination by City except as provided by law. Consultant may take and retain copies of such written products as desired, but no such written products shall be the subject of a copyright application by Consultant.

10. RELATIONSHIP OF PARTIES

10.1. **General.** Consultant is, and shall at all times remain as to City, a wholly independent contractor.

10.2. **No Agent Authority.** Consultant shall have no power to incur any debt, obligation, or liability on behalf of City or otherwise to act on behalf of City as an agent. Neither City nor any of its agents shall have control over the conduct of Consultant or any of

Consultant's employees, except as set forth in this Agreement. Consultant shall not represent that it is, or that any of its agents or employees are, in any manner employees of City.

10.3. **Independent Contractor Status.** Under no circumstances shall Consultant or its employees look to the City as an employer. Consultant shall not be entitled to any benefits. City makes no representation as to the effect of this independent contractor relationship on Consultant's previously earned California Public Employees Retirement System ("CalPERS") retirement benefits, if any, and Consultant specifically assumes the responsibility for making such a determination. Consultant shall be responsible for all reports and obligations including, but not limited to: social security taxes, income tax withholding, unemployment insurance, disability insurance, and workers' compensation, and other applicable federal and state taxes.

10.4. **Indemnification of CalPERS Determination.** In the event that Consultant or any employee, agent, or subcontractor of Consultant providing services under this Agreement claims or is determined by a court of competent jurisdiction or CalPERS to be eligible for enrollment in CalPERS as an employee of the City, Consultant shall indemnify, defend, and hold harmless City for the payment of any employee and/or employer contributions for CalPERS benefits on behalf of Consultant or its employees, agents, or subcontractors, as well as for the payment of any penalties and interest on such contributions, which would otherwise be the responsibility of City.

11. INDEMNIFICATION

11.1 **Definitions.** For purposes of this Section 11, "Consultant" shall include Consultant, its officers, employees, servants, agents, or subcontractors, or anyone directly or indirectly employed by either Consultant or its subcontractors, in the performance of this Agreement. "City" shall include City, its officers, agents, employees and volunteers.

11.2 **Consultant to Indemnify City.** To the fullest extent permitted by law, Consultant shall indemnify, hold harmless, and defend City from and against any and all claims, losses, costs or expenses for any personal injury or property damage arising out of or in connection with Consultant's alleged negligence, recklessness or willful misconduct or other wrongful acts, errors or omissions of Consultant or failure to comply with any provision in this Agreement.

11.3 **Scope of Indemnity.** Personal injury shall include injury or damage due to death or injury to any person, whether physical, emotional, consequential or otherwise, Property damage shall include injury to any personal or real property. Consultant shall not be required to indemnify City for such loss or damage as is caused by the sole active negligence or willful misconduct of the City.

11.4 **Attorneys Fees.** Such costs and expenses shall include reasonable attorneys' fees for counsel of City's choice, expert fees and all other costs and fees of litigation.

Consultant shall not be entitled to any refund of attorneys' fees, defense costs or expenses in the event that it is adjudicated to have been non-negligent.

11.5 **Defense Deposit.** The City may request a deposit for defense costs from Consultant with respect to a claim. If the City requests a defense deposit, Consultant shall provide it within 15 days of the request.

11.6 **Waiver of Statutory Immunity.** The obligations of Consultant under this Section 11 are not limited by the provisions of any workers' compensation act or similar act. Consultant expressly waives its statutory immunity under such statutes or laws as to City.

11.7 **Indemnification by Subcontractors.** Consultant agrees to obtain executed indemnity agreements with provisions identical to those set forth here in this Section 11 from each and every subcontractor or any other person or entity involved in the performance of this Agreement on Consultant's behalf.

11.8 **Insurance Not a Substitute.** City does not waive any indemnity rights by accepting any insurance policy or certificate required pursuant to this Agreement. Consultant's indemnification obligations apply regardless of whether or not any insurance policies are determined to be applicable to the claim, demand, damage, liability, loss, cost or expense.

12. INSURANCE

12.1. **Insurance Required.** Consultant shall maintain insurance as described in this section and shall require all of its subcontractors, consultants, and other agents to do the same. Approval of the insurance by the City shall not relieve or decrease any liability of Consultant Any requirement for insurance to be maintained after completion of the work shall survive this Agreement.

12.2. **Documentation of Insurance.** City will not execute this agreement until it has received a complete set of all required documentation of insurance coverage. However, failure to obtain the required documents prior to the work beginning shall not waive the Consultant's obligation to provide them. Consultant shall file with City:

- Certificate of Insurance, indicating companies acceptable to City, with a Best's Rating of no less than A: VII showing. The Certificate of Insurance must include the following reference: **Preparation of Integrated Water and Wastewater Resources Management Plan.**
- Documentation of Best's rating acceptable to the City.
- Original endorsements effecting coverage for all policies required by this Agreement.
- City reserves the right to obtain a full certified copy of any Insurance policy and endorsements. Failure to exercise this right shall not constitute a waiver of the right to exercise later.

12.3. **Coverage Amounts.** Insurance coverage shall be at least in the following minimum amounts:

- Professional Liability Insurance: $2,000,000 per occurrence, $4,000,000 aggregate

- General Liability:
  - General Aggregate: $4,000,000
  - Products Comp/Op Aggregate $4,000,000
  - Personal & Advertising Injury $2,000,000
  - Each Occurrence $2,000,000
  - Fire Damage (any one fire) $ 100,000
  - Medical Expense (any 1 person) $ 10,000

- Workers' Compensation:
  - Workers' Compensation Statutory Limits
  - EL Each Accident $1,000,000
  - EL Disease - Policy Limit $1,000,000
  - EL Disease - Each Employee $1,000,000

- Automobile Liability
  - Any vehicle, combined single limit $1,000,000

Any available insurance proceeds broader than or in excess of the specified minimum insurance coverage requirements or limits shall be available to the additional insured. Furthermore, the requirements for coverage and limits shall be the greater of (1) the minimum coverage and limits specified in this Agreement, or (2) the broader coverage and maximum limits of coverage of any insurance policy or proceeds available to the named insured

12.4. **General Liability Insurance.** Commercial General Liability Insurance shall be no less broad than ISO form CG 00 01. Coverage must be on a standard Occurrence form. Claims-Made, modified, limited or restricted Occurrence forms are not acceptable.

12.5. **Worker's Compensation Insurance.** Consultant is aware of the provisions of Section 3700 of the Labor Code which requires every employer to carry Workers' Compensation (or to undertake equivalent self-insurance), and Consultant will comply with such provisions before commencing the performance of the work of this Agreement. If such insurance is underwritten by any agency other than the State Compensation Fund, such agency shall be a company authorized to do business in the State of California.

12.6. **Automobile Liability Insurance.** Covered vehicles shall include owned if any, non-owned, and hired automobiles and, trucks.

12.7. Pr**ofessional Liability Insurance or Errors & Omissions Coverage.** The deductible or self-insured retention may not exceed $50,000. If the insurance is on a Claims-Made basis, the retroactive date shall be no later than the commencement of the work. Coverage shall be continued for two years after the completion of the work by one of the following: (1) renewal of the existing policy; (2) an extended reporting period endorsement; or (3) replacement insurance with a retroactive date no later than the commencement of the work under this Agreement.

12.8. **Claims-Made Policies.** If any of the required policies provide coverage on a claims-made basis the Retroactive Date must be shown and must be before the date of the contract or the beginning of contract work. Claims-Made Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of the contract of work. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a Retroactive Date prior to the contract effective date, the Consultant must purchase "extended reporting" coverage for a minimum of five (5) years after completion of contract work.

12.9. **Additional Insured Endorsements.** The City, its City Council, Commissions, officers, and employees of South Pasadena must be endorsed as an additional insured for each policy required herein, other than Professional Errors and Omissions and Worker's Compensation, for liability arising out of ongoing and completed operations by or on behalf of the Consultant. Consultant's insurance policies shall be primary as respects any claims related to or as the result of the Consultant's work. Any insurance, pooled coverage or self-insurance maintained by the City, its elected or appointed officials, directors, officers, agents, employees, volunteers, or consultants shall be non-contributory. All endorsements shall be signed by a person authorized by the insurer to bind coverage on its behalf. General liability coverage can be provided using an endorsement to the Consultant's insurance at least as broad as ISO Form CG 20 10 11 85 or both CG 20 10 and CG 20 37.

12.10. **Failure to Maintain Coverage.** In the event any policy is canceled prior to the completion of the project and the Consultant does not furnish a new certificate of insurance prior to cancellation, City has the right, but not the duty, to obtain the required insurance and deduct the premium(s) from any amounts due the Consultant under this Agreement. Failure of the Consultant to maintain the insurance required by this Agreement, or to comply with any of the requirements of this section, shall constitute a material breach of this Agreement.

12.11. **Notices.** Contractor shall provide immediate written notice if (1) any of the required insurance policies is terminated; (2) the limits of any of the required policies are reduced; (3) or the deductible or self-insured retention is increased. Consultant shall provide no less than 30 days' notice of any cancellation or material change to policies required by this Agreement. Consultant shall provide proof that cancelled or expired policies of insurance have been renewed or replaced with other policies providing at

least the same coverage. Such proof will be furnished at least two weeks prior to the expiration of the coverages. The name and address for Additional Insured Endorsements, Certificates of Insurance and Notices of Cancellation is: City of South Pasadena, Attn: Julian Lee, Deputy Public Works Director, 1414 Mission Street, South Pasadena, CA 91030.

12.12. **Consultant's Insurance Primary.** The insurance provided by Consultant, including all endorsements, shall be primary to any coverage available to City. Any insurance or self-insurance maintained by City and/or its officers, employees, agents or volunteers, shall be in excess of Consultant's insurance and shall not contribute with it.

12.13. **Waiver of Subrogation.** Consultant hereby waives all rights of subrogation against the City. Consultant shall additionally waive such rights either by endorsement to each policy or provide proof of such waiver in the policy itself.

12.14. **Report of Claims to City.** Consultant shall report to the City, in addition to the Consultant's insurer, any and all insurance claims submitted to Consultant's insurer in connection with the services under this Agreement.

12.15. **Premium Payments and Deductibles.** Consultant must disclose all deductables and self-insured retention amounts to the City. The City may require the Consultant to provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within retention amounts. Ultimately, City must approve all such amounts prior to execution of this Agreement.

City has no obligation to pay any premiums, assessments, or deductibles under any policy required in this Agreement. Consultant shall be responsible for all premiums and deductibles in all of Consultant's insurance policies. The amount of deductibles for insurance coverage required herein are subject to City's approval.

12.16. **Duty to Defend and Indemnify.** Consultant's duties to defend and indemnify City under this Agreement shall not be limited by the foregoing insurance requirements and shall survive the expiration of this Agreement.

13. MUTUAL COOPERATION

13.1. **City Cooperation in Performance.** City shall provide Consultant with all pertinent data, documents and other requested information as is reasonably available for the proper performance of Consultant's services under this Agreement.

13.2. **Consultant Cooperation in Defense of Claims.** If any claim or action is brought against City relating to Consultant's performance in connection with this Agreement, Consultant shall render any reasonable assistance that City may require in the defense of that claim or action.

14. NOTICES

Any notices, bills, invoices, or reports required by this Agreement shall be deemed received on: (i) the day of delivery if delivered by hand, facsimile or overnight courier service during Consultant's and City's regular business hours; or (ii) on the third business day following deposit in the United States mail if delivered by mail, postage prepaid, to the addresses listed below (or to such other addresses as the parties may, from time to time, designate in writing).

If to City

Julian Lee
City of South Pasadena
Public Works Department
1414 Mission Street
South Pasadena, CA 91030
Telephone: (626) 403-7240
Facsimile: (626) 403-7241

If to Consultant

Inge Wiersema
Carollo Engineers, Inc.
707 Wilshire Boulevard, Suite 3920
Los Angeles, California 90017
Telephone: (213) 489-1587
Facsimile: (213) 572-0361

With courtesy copy to:

Teresa L. Highsmith, Esq.
South Pasadena City Attorney
Colantuono, Highsmith & Whatley, PC
790 E. Colorado Blvd. Ste. 850
Pasadena, CA 91101
Telephone: (213) 542-5700
Facsimile: (213) 542-5710

15. SURVIVING COVENANTS

The parties agree that the covenants contained in paragraph 5.11 (Records), paragraph 10.4 (Indemnification of CalPERS Determination), Section 11 (Indemnity), paragraph 12.8 (Claims-Made Policies), paragraph 13.2 (Consultant Cooperation in Defense of Claims), and paragraph 18.1 (Confidentiality) of this Agreement shall survive the expiration or termination of this Agreement, subject to the provisions and limitations of this Agreement and all otherwise applicable statutes of limitations and repose.

16. TERMINATION

16.1. **City Termination.** City may terminate this Agreement for any reason on five calendar days' written notice to Consultant. Consultant agrees to cease all work under this Agreement on or before the effective date of any notice of termination. All City data, documents, objects, materials or other tangible things shall be returned to City upon the termination or expiration of this Agreement.

16.2. **Consultant Termination.** Consultant may terminate this Agreement for a material breach of this Agreement upon 30 days' notice.

16.3. **Compensation Following Termination.** Upon termination, Consultant shall be paid based on the work satisfactorily performed at the time of termination. In no event shall Consultant be entitled to receive more than the amount that would be paid to Consultant for the full performance of the services required by this Agreement. The City shall have the benefit of such work as may have been completed up to the time of such termination.

16.4. **Remedies.** City retains any and all available legal and equitable remedies for Consultant's breach of this Agreement.

17. INTERPRETATION OF AGREEMENT

17.1. **Governing Law.** This Agreement shall be governed and construed in accordance with the laws of the State of California.

17.2. **Integration of Exhibits.** All documents referenced as exhibits in this Agreement are hereby incorporated into this Agreement. In the event of any material discrepancy between the express provisions of this Agreement and the provisions of any document incorporated herein by reference, the provisions of this Agreement shall prevail. This instrument contains the entire Agreement between City and Consultant with respect to the transactions contemplated herein. No other prior oral or written agreements are binding upon the parties. Amendments hereto or deviations herefrom shall be effective and binding only if made in writing and executed on by City and Consultant.

17.3. **Headings.** The headings and captions appearing at the commencement of the sections hereof, and in any paragraph thereof, are descriptive only and for convenience in reference to this Agreement. Should there be any conflict between such heading, and the section or paragraph thereof at the head of which it appears, the language of the section or paragraph shall control and govern in the construction of this Agreement.

17.4. **Pronouns.** Masculine or feminine pronouns shall be substituted for the neuter form and vice versa, and the plural shall be substituted for the singular form and vice versa, in any place or places herein in which the context requires such substitution(s).

17.5. **Severability.** If any term or provision of this Agreement or the application thereof to any person or circumstance shall, to any extent, be invalid or unenforceable, then such term or provision shall be amended to, and solely to the extent necessary to, cure such invalidity or unenforceability, and shall be enforceable in its amended form. In such event, the remainder of this Agreement, or the application of such term or provision to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected, and each term and provision of this Agreement shall be valid and be enforced to the fullest extent permitted by law.

17.6. **No Presumption Against Drafter.** Each party had an opportunity to consult with an attorney in reviewing and drafting this agreement. Any uncertainty or ambiguity shall not be construed for or against any party based on attribution of drafting to any party.

18. GENERAL PROVISIONS

18.1. **Confidentiality.** All data, documents, discussion, or other information developed or received by Consultant for performance of this Agreement are deemed confidential and Consultant shall not disclose it without prior written consent by City. City shall grant such consent if disclosure is legally required. All City data shall be returned to City upon the termination or expiration of this Agreement.

18.2. **Conflicts of Interest.** Consultant maintains and warrants that it has not employed nor retained any company or person, other than a bona fide employee working solely for Consultant, to solicit or secure this Agreement. Further, Consultant warrants that it has not paid nor has it agreed to pay any company or person, other than a bona fide employee working solely for Consultant, any fee, commission, percentage, brokerage fee, gift or other consideration contingent upon or resulting from the award or making of this Agreement. Consultant further agrees to file, or shall cause its employees or subcontractor to file, a Statement of Economic Interest with the City's Filing Officer if required under state law in the performance of the services. For breach or violation of this warranty, City shall have the right to rescind this Agreement without liability. For the term of this Agreement, no member, officer, or employee of City, during the term of his or her service with City, shall have any direct interest in this Agreement, or obtain any present or anticipated material benefit arising therefrom.

18.3. **Non-assignment.** Consultant shall not delegate, transfer, subcontract or assign its duties or rights hereunder, either in whole or in part, without City's prior written consent, and any attempt to do so shall be void and of no effect. City shall not be obligated or liable under this Agreement to any party other than Consultant.

18.4. **Binding on Successors.** This Agreement shall be binding on the successors and assigns of the parties.

18.5. **No Third-Party Beneficiaries.** Except as expressly stated herein, there is no intended third-party beneficiary of any right or obligation assumed by the parties.

18.6. **Time of the Essence.** Time is of the essence for each and every provision of this Agreement.

18.7. **Non-Discrimination.** Consultant shall not discriminate against any employee or applicant for employment because of race, sex (including pregnancy, childbirth, or related medical condition), creed, national origin, color, disability as defined by law, disabled veteran status, Vietnam veteran status, religion, age (40 and above), medical condition (cancer-related), marital status, ancestry, or sexual orientation. Employment

actions to which this provision applies shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; or in terms, conditions or privileges of employment, and selection for training. Consultant agrees to post in conspicuous places, available to employees and applicants for employment, the provisions of this nondiscrimination clause.

18.8. **Waiver.** No provision, covenant, or condition of this Agreement shall be deemed to have been waived by City or Consultant unless in writing signed by one authorized to bind the party asserted to have consented to the waiver. The waiver by City or Consultant of any breach of any provision, covenant, or condition of this Agreement shall not be deemed to be a waiver of any subsequent breach of the same or any other provision, covenant, or condition.

18.9. **Excused Failure to Perform.** Consultant shall not be liable for any failure to perform if Consultant presents acceptable evidence, in City's sole judgment, that such failure was due to causes beyond the control and without the fault or negligence of Consultant.

18.10. **Remedies Non-Exclusive.** Each right, power and remedy provided for herein or now or hereafter existing at law, in equity, by statute, or otherwise shall be cumulative and shall be in addition to every other right, power, or remedy provided for herein or now or hereafter existing at law, in equity, by statute, or otherwise. The exercise, the commencement of the exercise, or the forbearance from the exercise by any party of any one or more of such rights, powers or remedies shall not preclude the simultaneous or later exercise by such party of any or all of such other rights, powers or remedies.

18.11. **Attorneys' Fees.** If legal action shall be necessary to enforce any term, covenant or condition contained in this Agreement, the prevailing party shall be entitled to an award of reasonable attorneys' fees and costs expended in the action.

18.12. **Venue.** The venue for any litigation shall be Los Angeles County, California and Consultant hereby consents to jurisdiction in Los Angeles County for purposes of resolving any dispute or enforcing any obligation arising under this Agreement.

TO EFFECTUATE THIS AGREEMENT, the parties have caused their duly authorized representatives to execute this Agreement on the dates set forth below.

"City" City of South Pasadena	"Consultant" Carollo Engineers, Inc.
By:_____ *Signature*	By:_____ *Signature*
Printed:_____	Printed:_____
Title:_____	Title:_____
Date:_____	Date:_____

Attest:

By:_____
Maria E. Ayala, Chief City Clerk

Date:_ _____

Approved as to form:

By:_____
Teresa L. Highsmith, City Attorney

Date:_____

EXHIBIT A

Scope of Services

Scope of Services

Project Purpose:

Carollo Engineers, Inc. (Carollo) will provide engineering services to prepare the City of South Pasadena's Integrated Water and Wastewater Resources Management Plan (IWWRMP), which will include an integrated plan for potable water, recycled/non-potable water, sewer, and stormwater management/services. Upon completion, the IWWMP will holistically characterize the City's various water resources, as well as identify short- and long-term water operation and management strategies to better cope with future changing water supply sources, weather fluctuations, and commodity values

Scope of Work:

Carollo will perform the following engineering services:

1. Project Management

Carollo will perform project management and administration activities throughout the duration of the project. Project administration consists of project setup and document control, monthly monitoring of schedule and budget, monthly invoicing, and project close-out activities. Specific work activities will consist of project administration, progress reports, and quality control.

2. Potable and Recycled Water Master Plan

Carollo will coordinate with City staff to prepare Potable and Recycled Water Master Plan including following tasks:

- Collect and review relevant documents, GIS data, operational records, billing data, production records, water supply information, existing asset management programs, and other pertinent data related to update of the IWWRMP.
- Create a facility inventory of the City's potable water tanks, pump stations, control valves, and emergency interconnections and evaluate the existing condition of the facilities and to make recommendations for modifications and improvements at the facilities based on visual inspection.
- Update the existing water hydraulic model to current conditions and will update the City's water system GIS database with new construction and modifications made to the water system since the GIS was last updated.
- Collect information on planned rate of growth from the City and from Southern California Association of Governments (SCAG) to project populations.
- Overlay the population projections in GIS using land use data, aerial photography, pressure zone, and sewershed boundaries.
- Analyze the City's existing water demand using historical billing data, historical water production records from calendar year 2019, SCADA data from calibration day, and sewer flow generation rates, to calculate the portable water demand patterns.
- Identify the top 20 potential recycled water customers within the City's service area by evaluating the historical billing records, land use map, specific plans, aerial maps, and previous planning documents.

- Evaluate two potential sources of recycled water (PWP and Upper District) for the City. Based on the list of potential recycled water customers
- Review data concerning existing and future imported water, recycled water, and groundwater recharge plans and future opportunities for changes in the City's water supply mix will be identified and summarized.
- Utilize the hydraulic model to evaluate the water system under a variety of demand conditions.
- Develop an age-based water system facility maintenance and pipeline replacement and rehabilitation (R&R) plan.
- Develop planning-level unit construction costs for infrastructure components to be discussed and finalized with City staff for the development of the water and recycled water CIPs.

3. Stormwater Master Plan

Carollo will coordinate with City staff to prepare Stormwater Master Plan including following tasks:

- Review County's existing stormwater/drainage system data and the latest City's stormwater project concepts that are currently under development pursuant to the Los Angeles County MS4 Permit requirements and identify future regional stormwater capture projects in the Main Basin/Raymond Basin that can contribute to groundwater recharge.
- Review the ULAR EWMP and the Rio Hondo/San Gabriel River EWMP for stormwater capture and infiltration projects proposed within the City limits.
- Develop a GIS-based file of existing drainage system and stormwater mitigation projects and update the City's existing stormwater system GIS database with new construction and modifications made to the water system since the GIS was last updated.

4. Sewer System Master Plan and Sanitary Sewer Management Plan (SSMP)

Carollo will coordinate with City staff to prepare Sewer System Master Plan and SSMP including following tasks:

- Review the condition assessment index scoring of the recently completed citywide CCTV inspection of pipeline that have not been replaced during the major R&R effort of 2014-2017.
- Conduct a desk top analysis of the City's pipelines to determine high priority areas for new CCTV inspection and/or replacement.
- Update the City's sewer system GIS database with new construction and modifications made to the sewer system since the GIS was last updated.
- Create a hydraulic computer model of the City's sewer collection system and its lift station facilities.
- Develop base sanitary flows for both near-term (year 2025 or 2030) and long-term (year 2050) conditions and perform a hydraulic capacity analysis under the design storm for each basin using the calibrated model, and projected peak flow rates and system expansion.
- Develop planning-level unit construction costs for infrastructure components to be discussed and finalized with City staff for the development of the sewer system CIPs.

- Update the City's SSMP to be in compliance with all regulatory requirements consisting of following:
    - Organization Structure in charge of Sanitary Sewer Overflows (SSOs)
    - Legal Authority
    - Operation and Maintenance (O&M)
    - Overflow Emergency Response Plan
    - Fats, Oils, and Grease (FOG) Control Program
    - Design and Performance Provisions.
    - System Evaluation and Capacity Assurances Plan (e.g. CIP)
    - Monitoring, Measurement, and Program Modifications
    - SSMP Program Audits
    - Communication Program
- Provide a training course to City staff on updates made to the SSMP and in the use of the water system hydraulic model.

5. GIS System and CIP Integration

Carollo will coordinate with City staff to assist in GIS System and CIP Integration including following tasks:

- Integrate the potable water, recycled water, stormwater, and wastewater system GIS files into a common platform (e.g. google earth or similar) and provide necessary training to the City staff.
- Integrate water, sewer, and recycled water CIPs into a single master CIP.
- Develop a financial plan that encompasses revenue sources and funding strategies for sustainable future CIP and on-going operational/maintenance requirements.

6. Integrated Water and Wastewater Resources Management Plan Report

Carollo will coordinate with City staff to prepare finalized Integrated Water and Wastewater Resources Management Plan Report including following tasks:

- Compile the work conducted in previous tasks into the Draft IWWRMP report that will summarize the assumptions, analysis criteria, report findings, and recommendations of the City's system facilities evaluations.
- Incorporate one set of consolidated comments, preferably provided in electronic format using Track Changes in the word version of the report chapters supplemented by manual/electronic mark-ups on maps and figures.

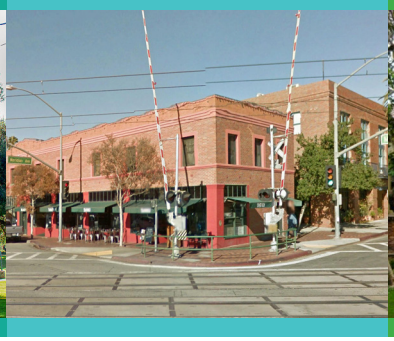
Period of Performance:

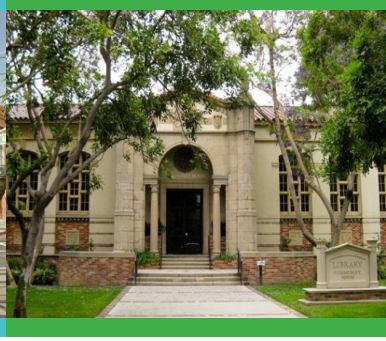
January 1, 2020 through December 31, 2021

EXHIBIT B

Fee Schedule from Carollo

CITY OF
SOUTH
PASADENA





FEE PROPOSAL FOR THE PREPARATION OF

INTEGRATED WATER AND WASTEWATER RESOURCES MANAGEMENT PLAN (IWWRMP)

RFP #201908-02 | SEPTEMBER 2019

carollo
Engineers...Working Wonders With Water®

15-108

carollo
Engineers...Working Wonders With Water®

707 Wilshire Boulevard, Suite 3920, Los Angeles, California 90017
P. 213.489.1587 F. 213.572.0361

September 30, 2019

Julian Lee, Deputy Public Works Director
City of South Pasadena
Public Works Department
1414 Mission Street
South Pasadena, CA 91030

Subject: Fee Proposal for Preparation of an Integrated Water and Wastewater Resources Management Plan

Dear Mr. Lee:

As requested in your Request for Proposal for the above-referenced project, we have attached our detailed labor-hour estimates for each Master Plan component with cost breakdowns by personnel classification. Please note that we changed the task numbering from "A, B, C" to "1, 2, 3."

Our estimated not-to-exceed fee for the base scope of services of Tasks 1-6 is $509,675. This includes a total of 12 project meetings, 20 conference calls/webmeetings, and 2 public meetings. The table below summarizes our fee breakdown by task:

Task Description	Labor Hours	Task Fee	Trainings
Task 1 - Project Management and Meetings	N/A (Embedded in Tasks 2-6)		N/A
Task 2 - Potable and Recycled Water Master Plan	860	$186,213	Water Model Training
Task 3 - Stormwater System Plan	220	$45,019	N/A
Task 4 - Sewer Master Plan and SSMP	594	$131,208	Sewer Model Training SSMP Update Training
Task 5 - GIS System and CIP Integration	214	$47,559	Integrated GIS Training
Task 6 - Integrated Master Plan Report	475	$99,676	N/A
Totals	**2,363**	**$509,675**	-

In addition, we have included the optional tasks listed in the proposal and added some creative scope enhancement ideas that could benefit the IWWRMP. The optional tasks can be added individually to the base scope or be considered as part of future services.

Should you select our team for this work, we welcome the opportunity to sit down with you to discuss the project in greater detail, further define the scope, and finalize the budget and labor hours required to accomplish the work to your satisfaction. Thank you for the opportunity to submit our proposal and we look forward to continuing our great working relationship with the City.

Sincerely,

CAROLLO ENGINEERS, INC.

Gil F. Crozes, PhD
Senior Vice President/Principal-in-Charge

Inge Wiersema, PE
Vice President/Project Manager

Enclosures: Labor-Hour Fee Estimate
Hourly Rate Schedule

City of South Pasadena Integrated Water and Wastewater Resources Management Plan - Fee Estimate

Task Descriptions	CAROLLO LABOR HOURS													COST SUMMARY		
	Project Manager Inge Wiersema	Technical Review Tim Loper & Lara Kammereck	Project Engineer Matt Huang	Recycled Water Master Plan Lead Aimee Zhao	Potable Water Master Plan Lead Ryan Hejka	Sewer System Master Plan and SSMP Lead Ryan Orgill	Stormwater System Master Plan Lead Bronwyn Kelly	Master Plan Suppor Laura Southworth	Infrastructure Replacement Plan David Baranowski	Funding Options Kyle Rhorer	GIS Jackie Silber	Document Processing Various Staff	TOTAL HOURS	LABOR FEE ESTIMATE	OTHER DIRECT COSTS	TOTAL FEE ESTIMATE
Task 1 - Project Management and Meetings																
1.1 Project Management and Coordination (12 months)																
1.2 Project Meetings (12)	*Labor Effort for Task 1 is embedded in Tasks 2-6*													*Task 1 Fee is embedded in Tasks 2-6*		
1.3 Conference Calls/Webmeetings (20)																
1.4 Public Meetings (2)																
Task 1 Subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n/a**	**n/a**	**n/a**
Task 2 - Potable and Recycled Water Master Plan																
2.1 Data Gathering	4	0	16	4	4	4	4	4	0	0	0	0	40	$8,444	$868	$9,312
2.2 Facility Inventory and Operational Assesment	4	0	8	0	8	0	0	8	0	0	0	6	34	$6,578	$1,798	$8,376
2.4 Develop Water System GIS	0	2	2	0	4	0	0	0	0	0	32	0	40	$6,014	$868	$6,882
2.5 Update Existing Water Model	8	4	18	0	32	0	0	24	0	0	16	2	104	$20,416	$1,617	$22,033
2.7 Population Projections	6	0	6	0	8	0	0	8	0	0	8	2	38	$7,284	$845	$8,129
2.8 Potable Water Demand Analysis and Forecast	6	2	10	4	16	0	0	32	0	0	0	2	72	$14,208	$1,242	$15,450
2.9 Recycled Water Demand Estimates	6	0	6	26	0	0	0	2	0	0	8	2	50	$9,060	$985	$10,045
2.11 Future Water Supply Strategy	8	2	24	4	12	0	0	24	0	0	4	4	82	$16,244	$1,359	$17,603
2.12 Hydraulic Water System Analysis	8	2	24	0	48	0	0	0	0	0	8	2	92	$19,334	$1,476	$20,810
2.12 Future Recyled Water Opportunities	8	2	16	40	0	0	0	0	0	0	8	2	76	$14,366	$1,289	$15,655
2.13 Water System Replacement Plan	8	4	16	0	24	0	0	8	40	0	8	4	112	$22,884	$1,710	$24,594
2.15 Water and Recycled Water CIP	16	2	24	4	16	0	0	16	8	0	12	2	100	$20,338	$1,570	$21,908
2.16 Model Training	0	0	2	0	16	0	0	2	0	0	0	0	20	$4,182	$1,234	$5,416
Task 2 Subtotal	**82**	**20**	**172**	**82**	**188**	**4**	**4**	**128**	**48**	**0**	**104**	**28**	**860**	**$169,352**	**$16,861**	**$186,213**
Task 3 - Stormwater System Plan																
3.1 Background Data Review	4	0	4	0	0	0	8	0	0	0	0	0	16	$3,644	$487	$4,131
3.2 Existing Stormwater Program and Projects	8	0	10	0	0	0	24	0	0	0	4	3	49	$10,287	$873	$11,160
3.3 Regional Stormwater Capture and Recharge	10	2	14	0	0	0	40	0	0	0	4	3	73	$15,635	$1,154	$16,789
3.4 Develop Stormwater GIS	0	2	4	0	0	0	4	0	0	0	72	0	82	$11,680	$1,259	$12,939
Task 3 Subtotal	**22**	**4**	**32**	**0**	**0**	**0**	**76**	**0**	**0**	**0**	**80**	**6**	**220**	**$41,246**	**$3,773**	**$45,019**
Task 4 - Sewer Master Plan and SSMP																
4.1 Review Existing CCTV Inspection Data	8	0	8	0	0	16	0	0	24	0	0	0	56	$12,208	$1,255	$13,463
4.2 Update Sewer System GIS	0	2	2	0	0	4	0	0	0	0	32	0	40	$6,014	$1,068	$7,082
4.3 Develop Sewer System Model	8	4	20	0	0	32	0	40	0	0	16	4	124	$23,856	$2,051	$25,907
4.5 Sewer Flow Projections	8	2	12	0	0	16	0	8	0	0	8	2	56	$11,354	$1,255	$12,609
4.6 Sewer System Hydraulic Analysis	8	2	20	0	0	24	0	16	0	0	8	4	82	$16,384	$1,559	$17,943
4.7 Sewer System CIP	16	2	12	0	0	16	0	4	16	0	12	2	80	$16,638	$1,536	$18,174
4.8 SSMP Update	12	2	36	0	0	20	0	24	2	0	8	8	112	$22,290	$1,910	$24,200
4.9 Sewer Model Training	0	0	4	0	0	16	0	2	0	0	0	0	22	$4,608	$1,857	$6,465
4.10 SSMP Update Training	0	0	4	0	0	16	0	2	0	0	0	0	22	$4,608	$757	$5,365
Task 4 Subtotal	**60**	**14**	**118**	**0**	**0**	**160**	**0**	**96**	**42**	**0**	**84**	**20**	**594**	**$117,960**	**$13,248**	**$131,208**
Task 5 - GIS System and CIP Integration																
5.1 Integrated System GIS	0	2	2	0	2	2	2	0	0	0	40	0	50	$7,488	$885	$8,373
5.2 GIS System Training	0	0	0	0	0	0	0	0	0	0	12	0	12	$1,572	$640	$2,212
5.3 Integrated Master Plan CIP	10	2	24	8	12	12	4	0	0	0	8	2	82	$17,010	$1,259	$18,269
5.4 Strategic Financial Planning	12	0	14	0	0	0	0	0	0	40	0	4	70	$17,586	$1,119	$18,705
Task 5 Subtotal	**22**	**4**	**40**	**8**	**14**	**14**	**6**	**0**	**0**	**40**	**60**	**6**	**214**	**$43,656**	**$3,903**	**$47,559**
Task 6 - Integrated Master Plan Report																
6.1 Draft IWWRMP Report (3 hard copies)	16	16	24	8	40	40	8	20	0	0	16	40	228	$44,128	$3,168	$47,296
6.2 Final Draft IWWRMP Report (3 hard copies)	12	10	16	4	24	24	4	16	0	0	12	24	146	$28,280	$2,208	$30,488
6.3 Final IWWRMP Report (10 hard copies)	8	5	16	2	16	16	2	12	0	0	8	16	101	$19,510	$2,382	$21,892
Task 6 Subtotal	**36**	**31**	**56**	**14**	**80**	**80**	**14**	**48**	**0**	**0**	**36**	**80**	**475**	**$91,918**	**$7,758**	**$99,676**
TOTALS WITHOUT OPTIONAL TASKS	**222**	**73**	**418**	**104**	**282**	**258**	**100**	**272**	**90**	**40**	**364**	**140**	**2,363**	**$464,132**	**$45,543**	**$509,675**
Optional Tasks																
2.3 Water System Facilities Conditions Assessment	8	16	8	0	0	0	0	40	0	0	0	8	80	$16,112	$936	$17,048
2.6 Water Model Calibration & Validation	2	0	16	0	60	0	0	24	0	0	8	4	114	$22,416	$1,334	$23,750
2.14 Water Main Risk Assessment [1]	8	0	32	0	0	0	0	0	0	0	16	0	56	$11,088	$655	Appr. $30k-$60K
3.5 Stormwater Project Benefits Analysis & Prioritization	16	0	0	0	0	0	40	0	0	0	0	4	60	$13,332	$702	$14,034
4.4 Sewer Model Calibration (with 1 month of flow monitoring)	2	4	8	0	0	32	0	24	0	0	4	4	78	$15,312	$44,913	$60,225

Notes:

1) Actual Cost and effort can only be determined after Fracta has reviewed the Water System GIS data. Carollo's portion of the SOW and fee is only a rough estimate and subject to changes due to assumptions about Fracta's scope and deliverables.

2) The total fee of the sewer model calibration is greatly dependent on number of flow monitoring locations and duration. This can be adjusted to meet the City's expectations.

CAROLLO ENGINEERS, INC.
FEE SCHEDULE

As of January 1, 2019
California

	Hourly Rate
Engineers/Scientists	
Assistant Professional	$174.00
Professional	205.00
Project Professional	213.00
Lead Project Professional	272.00
Technicians	
Technicians	131.00
Support Staff	
Document Processing / Clerical	115.00
Project Equipment Communication Expense (PECE) Per DL Hour	**11.70**
Other Direct Expenses	
Travel and Subsistence	at cost
Mileage at IRS Reimbursement Rate Effective January 1, 2019	$0.58 per mile
Subconsultant	cost + 10%
Other Direct Cost	cost + 10%
Expert Witness	Rate x 2.0

This fee schedule is subject to annual revisions due to labor adjustments.

City Council Agenda Report

ITEM NO. 16

DATE: December 18, 2019

FROM: Stephanie DeWolfe, City Manager

PREPARED BY: Shahid Abbas, Director of Public Works
Kristine Courdy, Deputy Director of Public Works

SUBJECT: **Consider Alternatives to Either Merge the Public Works Commission and the Freeway and Transportation Commission or to Continue Both as Permanent Bodies; and Approve the First Reading of an Ordinance to Implement the Chosen Course of Action**

Recommendation

It is recommended that the City Council:

1) Consider the following alternatives for the Public Works Commission (PWC) and Freeway and Transportation Commission (FTC);
    a. Merge the two commissions to create a Mobility and Infrastructure Commission (MIC); or
    b. Establish the PWC as a permanent commission and direct staff to continue to work with the PWC and FTC Ad Hoc Committee to develop clarified roles and responsibilities of the two commissions and return to City Council with a recommendation; and
2) Read by title only for first reading, waiving further reading, of one of the following two ordinances:
    a. Introduce an Ordinance to repeal Article IVD (Freeway and Transportation Commission) of Chapter 2 "Administration" of the South Pasadena Municipal Code (SPMC), repeal Article IVK (Public Works Commission) of SPMC Chapter 2, and add a new Article IVK (Mobility and Infrastructure Commission) to SPMC Chapter 2 to create the Mobility and Infrastructure Commission (MIC); or
    b. Introduce an Ordinance amending Article IVK (Public Works Commission) of SPMC Chapter 2 to repeal Section 2.79-6 Sunset to establish the PWC as a permanent commission.

Executive Summary

The City of South Pasadena is at a crossroads in terms of mobility and transportation. After more than 60 years of struggling with potential impacts of the 710 freeway, and little investment in street infrastructure or technology during that time, the freeway is now dead. For the first time in decades, the City is in a position to consider the future of mobility without the freeway dividing and impacting the City. At the same time, almost $100 million in regional funding has

been granted to the City for traffic and mobility projects. This creates a landmark opportunity for the City to not only envision, but implement, a new mobility blueprint for the community that anticipates and plans for the needs and desires of future generations. The timing of this opportunity is made more critical as mobility patterns are changing in response to quickly evolving technology and new mandates for complete streets that embrace multiple modes of transportation.

At issue is the City's commission structure that will support this new era of mobility and transportation planning. The City has had a Freeway and Transportation Commission (FTC) charged with oversight of all things related to the now-dead freeway, and a Public Works Commission (PWC) charged with oversight of major street construction projects. The scope of each is somewhat narrow and focused on specific issues that were of concern at the time the commissions were formed. The City now finds itself in a new position -- needing broad policy support regarding the creation of a framework to guide the expenditure of an extraordinary amount of grant funding. As currently stated in the City's Municipal Code, this task does not fall within the purview of either commission.

At this juncture however, the development of an overarching mobility strategy, and associated community engagement, is a critical framework needed to define allocation of current and future dollars. This unprecedented opportunity to create a comprehensive vision will drive the City's mobility, land use and economic future. While numerous studies have been conducted over the past several decades, those studies must be knit together, and in some cases updated, to create a current definition of objectives and priorities. This is a pressing need as the grant dollars come from a variety of sources and have varying project requirements and expenditure deadlines. Further, State and Federal legislators have indicated that corridor cities must work together to ensure that expenditures in each city are collaborative toward improving traffic flow across the region. It is a daunting task that requires both commission support and community engagement in the near future.

Two alternatives are presented here to address the commission structure. The first is to merge the two commissions into a new advisory body with a specific charge to advise the Council on the development and implementation of broad mobility and infrastructure policy in response to the need for a plan to guide the allocation of $100 million in funding. The second is to retain both commissions, but revise their charges to clarify roles and eliminate friction between the two, while still effectively generating a cohesive framework for future mobility planning. In a joint meeting with both commissions, the vote was evenly split as to whether to merge or remain separate. Staff presents an outline of both alternatives below.

Commission Review and Recommendation
On June 19, 2019 the Council established an Ad Hoc Committee comprised of Mayor Khubesrian, Councilmember Schneider, FTC Chair Nuckols, and PWC Vice-Chair Abelson to explore the possibility of merging the two commissions to address the overlapping roles and responsibilities of the two commissions.

On October 16, 2019, the Ad Hoc Committee met to discuss the potential FTC and PWC merger. There was consensus regarding the need for citizen oversight, however, the Ad Hoc Committee was split on the decision to merge. Following the Ad Hoc Committee, the FTC and PWC met in a special joint meeting to discuss the potential merger of the two commissions. The commissions were split on the decision to merge or to remain as two separate commissions (4-4).

On November 19, 2019, the Ad Hoc Committee met to discuss the purview of both commissions. The Ad Hoc Committee agreed that both commissions provide valuable policy recommendations to the Council and the Ad Hoc Committee recommended keeping the PWC as a permanent commission. In order to address the overlap between the commission purviews, the Ad Hoc Committee suggested that the PWC should provide policy oversight over large local projects (Capital Improvement Plan, Measure M Multi-year Subregional Plan, and mobility initiatives) and the FTC should provide oversight over regional and legislative issues related to mobility and transportation items surrounding the SR-710.

Discussion/Analysis
In the Municipal Code, the Public Works Commission was initially set to sunset in November of 2018. Prior to that date, City Council discussed the potential merger of the commissions, rather than a sunset of PWC, in the context of the lack of a future role for the Freeway and Transportation Commission once the freeway was dead. Although there was consensus regarding a need to reexamine the commission structure, Council determined that it was too early to consider because final action on the freeway was still pending. The Council voted at that time to extend the sunset date of the PWC to December 2019. On December 4, 2019, Council discussed the issue and directed staff to return on December 18 with an outline of potential alternatives.

Alternative 1: Merge the two Commissions and Establish a Mobility and Infrastructure Commission (MIC)

The original intent of the FTC was to provide support to the City Council regarding the fight against the SR-710. On October 12, 2019, Governor Newsom signed Assembly Bill 29 (Holden) and Senate Bill 7 (Portantino) to remove the SR-710 from the state highway code and deem the SR-710 North Project Freeway Alternatives as infeasible. The PWC was established seven years ago for oversight of large capital improvement projects, an outgrowth of specific concern with construction on Fair Oaks Avenue. Both commissions have successfully accomplished the goals set forth by the City Council.

At this juncture however, the City now finds itself in a new position -- needing broad policy support regarding the creation of a framework to guide the expenditure of an extraordinary amount of grant funding. As currently stated in the City's Municipal Code, this task does not fall within the purview of either commission.

Metro and Caltrans have recently discussed the need for the City to complete a feasibility study of the corridor to provide data and analysis that supports implementation of specific projects such as the proposed hook ramp. This feasibility analysis will likely generate multiple technical

options that may or may not align with prior studies, and will need to be weighed in consideration of current community priorities and funding availability. Development of an overarching mobility strategy, and associated community engagement, is a critical framework needed to define allocation of current and future dollars. While numerous studies have been conducted over the past several decades, those studies must be knit together, and in some cases updated, to create a current definition of objectives and priorities. Further, State and Federal legislators have indicated that corridor cities must work together to ensure that expenditures in each city are collaborative toward improving traffic flow across the region. This must also be factored into the City's overarching strategy.

In addition to the regional transportation funding opportunities, the City is currently undertaking major planning efforts such as the development of long term CIP, Neighborhood Traffic Management Plan, Integrated Water and Wastewater Resources Management Plan, Pavement Management Information System Plan, and has a pending grant application for an Active Transportation Plan. All these plans are interconnected and complement execution of each other.

A single commission with a new focus on guiding mobility policy and community engagement may be the most effective structure to meet these pressing needs. Having one commission to link these components together and advise the City Council on mobility and infrastructure policy matters is prudent and an effective way to oversee an integrated process. If this alternative is chosen, staff would recommend specifically also including water infrastructure and policy in the charge. Water utility management is an area that is currently not addressed in any commission scope, but new focus and funding both at the local and state level is likely to present a number of critical policy issues in the future that would benefit from commission perspective.

The new commission could be established as the Mobility and Infrastructure Commission (MIC) for the purpose of advising the City Council on policy matters regarding traffic, multi-modal transportation, new transportation technologies, infrastructure, and utility management. As described, the MIC could have the following roles and responsibilities:

- Advise the City Council on policy matters related to transportation and mobility including traffic management plans, transit, multi-modal transportation and active transportation, evolving transportation and mobility technologies, parking management, and regional transportation matters,
- Advise the City Council on regional transportation and infrastructure funding and planning;
- Advise the City Council on policy matters related to water utility management;
- Provide input on infrastructure policies and plans such as the CIP, Integrated Water Resource Plan, Active Transportation Plan, etc.; and
- Provide a forum for community input on mobility and infrastructure topics.

Under this option, the role of construction oversight would be removed from the commission charge. This issue could be handled, potentially more efficiently, by the convening of project-specific ad hoc oversight committees. Each ad hoc committee, comprised of residents with

technical expertise, would be appointed individually based on project scope. These ad hocs would serve the purpose of a second commission dedicated to construction oversight, but would meet only when necessary and would provide an increased level of technical review.

Both the PWC and FTC have three commissioners that will have reached their term limits by the end of December 2019 and two commissioners that are eligible to serve an additional full or partial term. In order to maintain consistency and institutional knowledge, the proposed composition of the five member MIC could include the two PWC commissioners and two FTC commissioners that are eligible for an additional term and one new commissioner that will be appointed by the Mayor in accordance with SPMC Chapter 2, Section 2.23 (Composition, appointment and removal of members).

Alternative 2: Establish the PWC as a Permanent Commission and establish clear roles and responsibilities for the two commissions

One of the primary concerns regarding this alternative is the overlap in roles and responsibilities. On November 19, 2019, the Ad Hoc Committee discussed the commission roles and responsibilities and suggested that the PWC should provide policy oversight over large local projects (Capital Improvement Plan, Measure M Multi-year Subregional Plan, and mobility initiatives) and the FTC should provide oversight over regional and legislative issues related to mobility and transportation items surrounding the SR-710. However, local and regional transportation items are interconnected and oversight of this important matter cannot be easily split between two commissions. The transportation network functions as a coherent system and does not acknowledge which pieces are considered regional or local, particularly with the elimination of the freeway from the network.

Even after the roles and responsibilities have been defined, overlap between the commissions may continue to generate conflicts in the recommendations provided to the City Council. During the ad hoc meetings it was suggested that perhaps the two commissions could regularly hold joint meetings however, this would effectively create one very large commission of 10 members that could be unwieldly.

In addition, the community and Metro has expressed interest in moving forward expeditiously with the $100 million in regional transportation projects. Guiding these projects through two commissions could cause significant time delays, confusion, and conflicting recommendations to City Council. Two separate commissions with overlapping roles could lead to conflicting requirements and recommendations, which can make project scoping and selection process difficult, complex and time consuming. This may ultimately result in the delay of the project delivery and have unintended consequence like suboptimal design and increased project costs. The City may also risk losing funding if timely decisions are not made.

Maintaining the PWC and FTC as two separate commissions will require the repeal of the sunset clause from SPMC Chapter 2, Article IVK, Section 2.79-6 to establish the PWC as a permanent commission.

Background
The PWC was formed on November 7, 2012 for a period of six years and was set to sunset on November 7, 2018. On May 12, 2017 the FTC and PWC submitted a joint letter regarding their shared roles and responsibilities. In September 19, 2018, the Council adopted Ordinance No. 2324 to extend the sunset of the PWC by an additional year, to sunset on December 31, 2019. In November 2018, to address the overlap in roles and responsibilities between the PWC and FTC, the City Council considered merging the PWC and FTC. At that time the State of California legislation regarding the SR-710 was not finalized, therefore the Council directed staff to return in one year with recommendations regarding merging the two commissions. On June 19, 2019 the City Council established a FTC and PWC Ad Hoc Committee explore the possibility of merging the two commissions. The Ad Hoc Committee has had several meetings and discussions regarding this matter.

Legal Review
The City Attorney has reviewed this item.

Fiscal Impact
There is no fiscal impact.

Public Notification of Agenda Item
The public was made aware that this item was to be considered this evening by virtue of its inclusion on the legally publicly noticed agenda, posting of the same agenda and reports on the City's website and/or notice in the *South Pasadena Review* and/or the *Pasadena Star-News*.

Attachments:
1) Ordinance to establish an Mobility and Infrastructure Commission
2) Ordinance to establish the PWC as a permanent commission

ATTACHMENT 1
Ordinance to establish an Mobility
and Infrastructure Commission

ORDINANCE NO.____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SOUTH PASADENA, CALIFORNIA REPEALING ARTICLE IVD (FREEWAY AND TRANSPORTATION COMMISSION) AND REPEALING ARTICLE IVK (PUBLIC WORKS COMMISSION) AND ADDING A NEW ARTICLE IVK (MOBILITY AND INFRASTRUCTURE COMMISSION) OF THE SOUTH PASADENA MUNICIPAL CODE

SECTION 1. Article IVD (Freeway and Transportation Commission), Sections 2.47 through 2.50 is repealed.

SECTION 2. Article IVK (Public Works Commission), Sections 2.79-1 through 2.79-6 is repealed.

SECTION 3. A new and renumbered Article IVK (Mobility and Infrastructure Commission) Sections 2.79-1 through 2.79- 5 is added to Chapter 2 (Administration) to read as follows:

"**ARTICLE IVK. MOBILITY AND INFRASTRUCTURE COMMISSION**

2.79-1 Creation.
There is hereby created a five-member Mobility and Infrastructure Commission.

2.79-2 Responsibilities.
It shall be the responsibility of the Mobility and Infrastructure Commission to serve in an advisory capacity to the City Council, as directed by the City Council or City Manager, on policies regarding:

(a) Mobility (traffic flow, active transportation, transit, mobility, regional transportation plans, and parking), infrastructure (parking management, sewer, , and utility management (Pavement Management Plan;
(b) Advise the capital improvement program;
(c) To provide input on capital improvement programs and long-term infrastructure maintenance and repair programs; and
(d) To provide policy recommendations on mobility projects and programs as directed by the city manager or the city council, including but not limited to transportation planning, bicycle and pedestrian policies, goods movement, charging and fueling infrastructure, vehicles, public transit, ridesharing, parking, sidewalks and streets.

2.79-3 Limitations.
The Mobility and Infrastructure Commission may discharge its responsibilities in the manner and means selected by it, except as follows:

(a) Unless expressly authorized to do so by the city council, it shall not represent itself to be, nor in any way act for or on behalf of the city council, nor shall it commit the officers, employees or staff of the city in any manner to any course of action; to the contrary, it shall act as a study center and clearinghouse for advisory action to the city council; and
(b) It shall not encroach upon any area preempted by state or federal law; and
(c) It shall forward all of its findings and recommendations to the city manager and the city council prior to public release.

2.79-4 Composition of members.

(a) The composition of the five-member Mobility and Infrastructure Commission will be appointed by the mayor. Term lengths will be staggered as follows: two members will serve one year and then be eligible for two consecutive three-year terms, and three members will serve two years then be eligible for two consecutive three-year terms. Future appointments will be made by the mayor pursuant to SPMC 2.23 (Composition, appointment and removal of members).
(b) All members shall have an expressed interest in and knowledge of public works projects, methods and procedures. For future appointments, the city shall make a concerted effort to recruit at least one registered civil engineer with an active license, professionals with expertise in other areas such as traffic engineering, transportation planning, structural engineering, architecture, landscape architecture, contracting or construction, construction law, or construction management and inspection.

2.79-5 Meetings.

The Mobility and Infrastructure Commission shall hold up to one regular meeting each month. The chair may call for a special meeting if needed with concurrence of the commission."

SECTION 4. SEVERABILITY. If any provision, section, paragraph, sentence or word of this ordinance, or the application thereof to any person or circumstance, is rendered or declared invalid by any court of competent jurisdiction, the remaining provisions, sections, paragraphs, sentences or words of this ordinance, and their application to other persons or circumstances, shall not be affected thereby and shall remain in full force and effect and, to that end, the provisions of this ordinance are severable.

SECTION 5. **CEQA.** This ordinance is exempt from the California Environmental Quality Act (CEQA) pursuant to 14 Cal. Code Regs. Section 15378(b)(5) as an agency organizational or administrative activity that produces no physical changes to the environment.

SECTION 6. EFFECTIVE DATE. This ordinance shall take effect thirty days after its passage and adoption pursuant to California Government Code Section 36937.

SECTION 7. This ordinance shall take effect thirty (30) days after its final passage and within fifteen (15) days after its passage, the City Clerk of the City of South Pasadena shall certify to the passage and adoption of this ordinance and to its approval by the Mayor and City Council and shall cause the same to be published in a newspaper in the manner required by law.

PASSED, APPROVED, AND ADOPTED this 18th day of December, 2019.

_____
Robert S. Joe, Mayor

ATTEST:

_____
Evelyn G. Zneimer, City Clerk
(seal)

APPROVED AS TO FORM:

_____
Teresa L. Highsmith, City Attorney

Date: _____

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I HEREBY CERTIFY the foregoing ordinance was duly adopted by the City Council of the City of South Pasadena, California, at a regular meeting held on the 18th day of December, 2019, by the following vote:

AYES:

NOES:

ABSENT:
ABSTAINED:

_____
Evelyn G. Zneimer, City Clerk
(seal)

ATTACHMENT 2
Ordinance to establish the PWC
as a permanent commission

ORDINANCE NO.____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SOUTH PASADENA, CALIFORNIA AMENDING ARTICLE IVK (PUBLIC WORKS COMMISSION) OF THE SOUTH PASADENA MUNICIPAL CODE TO REPEAL SECTION 2.79-6 (SUNSET) AND ESTABLISH THE PUBLIC WORKS COMMISSION AS A PERMANENT COMMISSION

SECTION 1. Article IVK (Public Works Commission), Section 2.79-6 is repealed to establish the Public Works Commission as a permanent commission.

SECTION 2. SEVERABILITY. If any provision, section, paragraph, sentence or word of this ordinance, or the application thereof to any person or circumstance, is rendered or declared invalid by any court of competent jurisdiction, the remaining provisions, sections, paragraphs, sentences or words of this ordinance, and their application to other persons or circumstances, shall not be affected thereby and shall remain in full force and effect and, to that end, the provisions of this ordinance are severable.

SECTION 3. **CEQA.** This ordinance is exempt from the California Environmental Quality Act (CEQA) pursuant to 14 Cal. Code Regs. Section 15378(b)(5) as an agency organizational or administrative activity that produces no physical changes to the environment.

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PASSED, APPROVED, AND ADOPTED this 18th day of December, 2019.

_____
Robert S. Joe, Mayor

ATTEST:

_____
Evelyn G. Zneimer, City Clerk
(seal)

APPROVED AS TO FORM:

_____
Teresa L. Highsmith, City Attorney

Date: _____

I HEREBY CERTIFY the foregoing ordinance was duly adopted by the City Council of the City of South Pasadena, California, at a regular meeting held on the 18th day of December, 2019, by the following vote:

AYES:

NOES:

ABSENT:
ABSTAINED:

_____
Evelyn G. Zneimer, City Clerk
(seal)