

## ATTACHMENT A: SCOPE OF SERVICES

### PUBLIC ENGAGEMENT PLAN

RDG+Price Lang will develop a Public Engagement Plan with City Staff at the start of the process. Our team will develop an engagement plan that includes both on-site and online opportunities, using hybrid approaches as necessary. Our goal will be to hear from the widest audience possible. To do this, all events and activities should be accessible to the widest audiences possible. To achieve this, our team will work with the City Staff to:

- Identify meeting locations that are accessible by public transit and fully handicap accessible
- Offer sign language services and other interpretive services as needed and directed by City Staff
- Review documents and maps illustrating data to ensure they are color-blind friendly
- Ensure that online engagement materials are e-reader friendly

Aspects of the public engagement plan will include:

**Management.** The day-to-day work of the plan will be completed in close partnership with the city with the understanding that staff has limited capacity. Weekly meetings (held by video conference) with the City's Comprehensive Plan Management Team will focus on coordination to plan upcoming events, ensure data collection, review meeting output, and develop content.

**Steering Committee.** The Steering Committee should bring broad representation to the planning process and include representation from the City Council, the Planning Commission and individuals representing each of the other planning processes (Transportation, Stormwater, Wastewater, Water, & Sanitation). We would encourage this group to be comprised of 10 to 15 focused and dedicated individuals with four sub-committees:

1. Water and Sanitation/Wastewater
2. Transportation
3. Stormwater
4. Housing

The sub-committees will allow for the Steering Committee to be expanded but closely tied together with a member of the Steering Committee serving the chair of the sub-committees. Sub-Committee members will be selected by the Steering Committee and City Staff. The Steering Committee will meet up to 12 times and each sub-committee will meet three to four times. The meeting schedule is set at the beginning of the process to establish involvement expectations and allow members to plan schedules accordingly.

**An Awareness Campaign.** Building awareness and understanding of the process will be the first step in engaging residents. We will craft the overall message and awareness of the planning process in partnership with the City Staff. This begins with development of a brand or theme that will be carried through every plan and all platforms.

- *Community Engagement Platform.* In addition to leveraging the city's website, our team will manage a Social PinPoint site where residents can offer feedback and follow the process.
- *Social Media.* The project team will work with City Staff to schedule and coordinate announcements for social media platforms. This will include regularly scheduled content for the City Manager's Newsletter.
- *Print Material.* In addition to online platforms will be traditional print media and promotional materials. This includes fliers, posters, and content for newsletters. Using an established project brand, our team will design, develop, and produce these materials.
- *Media.* Working with the City, the RDG+Price Lang+Garver team will also help provide content for local newspapers, TV interviews or other more traditional methods of informing people about the project. The team will work with the City to prepare press releases for events (see below) as appropriate.

**The Public Engagement Elements.** Our public engagement process is an interactive process that builds on each event to expand understanding, set goals, establish a vision, and create momentum for implementation. The Public Engagement Plan will identify an event schedule with an adjustable platform or format based on what is learned at each event to best reach the broadest audience.

The following are the minimum events to be included in the Community Engagement Plan.

- *Joint City Council/Planning Commission Kick-off.* At the beginning of the process a joint meeting will be held with the City Council and Planning Commission. The purpose of this meeting is to inform them on what to expect throughout the process and to gather their input on priorities and aspirations of the final plans.
- *Survey + Interactive Mapping.* The planning process begins with developing an online survey or report card. It will explore the issues and opportunities most important to residents in further detail and will be the first engagement with the plan. This may be supplemented by shorter surveys focused on each planning initiative.
- *Listening Sessions.* Our team will conduct a multi-day program of up to 12 small group listening sessions to learn more about the community and further explore opportunities and challenges. Traditionally, these sessions are limited to 10 people each. Some sessions will be offered as Zoom (video conferencing) meetings. Participants will be identified by City leadership and the Steering Committee.
- *Pop-Up Events.* During the development of the Public Engagement Plan, a specified number of pop-up events will be identified with flexibility to adjust these throughout the planning process. These may include appearance at traditional community festivals and events and may also include other less structured events. These events can be held throughout the planning process – in the beginning to learn what residents value and at the end to garner feedback on plan recommendations. Our team will assist with up to 10 pop-up events, including more spontaneous opportunities like idea walls.
- *Speakers Bureau.* Content will be provided for Steering Committee members, staff, or RDG team members to share information at different civic organizations. This may include a series of opinion articles that can be submitted by Steering Committee members related to the planning process and/or the plans themselves.
- *Committee Visioning Studio.* Our team will work with the Steering Committee to identify the goals and priorities for the Comprehensive Plan and the other six technical plans through visioning workshops.
- *Steering Committee Land Use Studio.* The first studio/charrette will be conducted with the Steering Committee. During this event, we guide the Committee to develop scenarios for the city's future growth and transportation alternatives.
- *Neighborhood Land Use Workshops.* Our team will advance the ideas heard and developed in the Committee studio to present development and redevelopment alternatives to the public. We propose doing this through a series of up to six neighborhood level workshops. These neighborhood level workshops offer a chance for the public to further refine the concepts.
- *Plan Elements Polling.* Following the workshops, the plan elements will be developed and presented to City Staff and the Committee over a series of meetings. Following review, specific policies and action items may be identified and presented to the public online for feedback.
- *Implementation Workshop.* We will host a workshop with the Committee to review the land use plan, key concepts, and recommendations before the formal approval process begins. The workshop will have an educational and input component. This workshop can be expanded to include Planning Commission and Council members, or a separate joint-meeting held with just these two groups.
- *Open Houses.* The final open house should be an event that allows people to learn more about the plans, have time with their neighbors, and celebrate the next steps. This means a part of the open house will relate to implementation. Materials can also be assembled and displayed in strategic locations where residents can review material and visit the website using a QR code to provide their feedback.

- *City Council & Planning Commission Briefings and Approval.* Within the planning process, up to three (3) updates can be provided to the Council members by the RDG+Garver team. A presentation of the final plan to the Planning Commission and City Council will also be done by the RDG+Garver team.

**Deliverables:**

- Public Engagement/Communications Plan
- Materials produced for any public events
- Meeting memos and summaries

## LAND USE PLAN

The Comprehensive Plan approach will answer three key questions:

- Where are we now?
- Where do we want to go?
- How do we get there?

### TASK 1 - NORMAN TODAY – WHERE ARE WE NOW?

This component of the plan identifies existing facts and trends and will rely heavily upon the data collected in the other plans.

**Background Document Review.** We will review current planning documents, including the current Comprehensive Plan, Neighborhood Plans, Norman Center City Vision, Porter Avenue Corridor Plan, ACOG's Encompass 2045 and any other relevant plans identified by City Staff.

**Economic & Development Trends.** Data will be gathered, assembled, and shared in easily communicated ways, including infographics and maps that identify regional, city-wide, and neighborhood trends and opportunities. 2020 Census data will be used along with other sources we access such as BLS, ESRI, and MLS. We will use locally sourced data working closely with University officials and regional sources like ACOG to develop an accurate picture of Norman today.

**Hazard Mitigation & Environmental Constraints.** The RDG+Garver team will collect the data necessary to inform any environmental constraints and hazards. This material will be mapped and may include:

- Topography/Slopes
- Wetlands Inventory
- Drainage System and Structures
- Flooding Boundaries and Flood Problem Areas

**Land Use Inventory & Urban Design.** Our team will supplement city and county provided land use data with on-site verification through driving, biking, and walking tours. This data will be collected to assess land use patterns and opportunities.

**Transportation, Public Facilities, & Infrastructure.** The RDG+Garver team will begin collecting data regarding the current state of the transportation and infrastructure systems through each of these planning processes. Like the comprehensive plans this will include review of existing studies and assessments of systems that have been completed. We understand that the public is more likely to interact with the Comprehensive Plan than many of the infrastructure studies, therefore, data presented from these studies will be less detailed and done in a way that is easy to understand and ties together all the planning processes, where all community ideas and input is given consideration.

**Housing & Neighborhoods.** The Housing Market Analysis and Affordability Strategy will include extensive data and an understanding for both the local market and metro trends. In addition to the data collected in the Housing Strategy, our team will:

- Assess neighborhood conditions, including a general review of neighborhood conditions based on perceptions of housing conditions, site maintenance issues, streets, sidewalks, infrastructure, physical design, and appearance.
- Determine needs to achieve overall housing objectives and needs by type and cost.

#### **Deliverables:**

- Norman Today draft report
- Updated or newly created GIS shapefiles related to land use inventory

## TASK 2 - NORMAN TOMORROW – WHERE DO WE WANT TO GO?

### Vision & Future Land Use

The Land Use Concept process uses the data collected in the Norman Today tasks to determine land use potential and repositioning by type of residential, commercial, industrial, and public land and transportation improvements and alternatives. Combined with the input of residents regarding community issues and quality of life, a unified Land Use Concept for the city is developed through the Steering Committee and Neighborhood workshop process outlined in the Public Engagement Elements.

**Goals and Development Principles.** Based on community engagement and understanding where we are today, a set of development principles and goals for each plan element will be established. These goals and principles will be reviewed and confirmed by City Staff and the Steering Committee.

**City Development Framework.** We will involve both the Steering Committee and the public in a highly participatory process to prepare and refine the Development Concept to guide the future development of Norman. This process includes two planning workshops:

- *Steering Committee Workshop.* This hands-on, physical-planning workshop will engage the Steering Committee in planning the physical future of Norman. Using a variety of maps and graphic resources, we will guide the participants in developing diagrammatic concepts for the city's future growth and form, and we can define areas of agreement and difference.
- *Neighborhood Workshops.* We will continue to evolve and develop the ideas generated in the Steering Committee Workshop. A series of neighborhood level workshops will focus on features such as the locations and types of historic districts, environmental features, commercial and mixed-use centers, potential residential areas, industrial development, and physical systems such as transportation, parks and greenways. Our team will knit together the neighborhood workshops to develop policy areas and a future land use map that will be presented and vetted by City Staff and the Steering Committee.

**Policy Areas.** This analysis examines planning and land use issues within the established city and development areas. These policy areas will offer a big-picture perspective with the goal of balancing neighborhoods and providing quality living environments across the city.

**Future Land Use Map.** The future land use plan will indicate the city-wide plan and identify any specific area plans necessary for the deployment of residential, commercial, additional industrial/employment and mixed-use space. The map will be accompanied by a Decision-Making Framework that will lay out a description of every land use and the associated policies and context for that land use.

#### **Deliverables:**

- Draft development framework
- Draft policy plan
- Draft future land use map

## TASK 3- NORMAN TOMORROW – HOW DO WE GET THERE?

### Plan Elements

The goals and principles define the program and design of the city; the specific plan elements are the systems that help the design come to life. Creating a cohesive strategy across the city and departments, this portion of the plan will tie together the land use strategy with the other plan studies:

- Comprehensive Transportation Plan
- Housing Market Analysis and Affordability Strategy
- Stormwater Master Plan
- Water and Wastewater Elements: High level identification of major investments needed to support growth.

In addition to the studies, the Plan Elements section will include policies and actions related to:

- *Parks, Trails, Natural Areas & Greenways.* We will incorporate existing parks and recreation studies and identify any gaps in the system as related to future development areas and corridors that can connect destinations around the city.
- *Community Character & Design.* The urban design element is closely related to the other elements. The policies and actions recommended related to urban design will be driven by public input and should speak to the residents' desires.

## Implementation

This section addresses issues necessary to achieve the plan. As part of the City Council and Planning Commission updates outlined in the Public Engagement section, an Implementation Workshop may be conducted. The purpose of this workshop is to review the plan and introduce how the plan can be used as a tool in their everyday decision-making process.

**Implementation Table.** The Norman Plan will include an implementation plan presenting the recommendations, sequencing, leaders, partners, and potential funding sources for capital items. This section will incorporate the items directly impacting the city's development that are identified in the other five studies. This should include significant extensions or upgrades to systems.

**Regulatory Review.** We will review current policies and ordinances for consistency, noting any conflicts that could be reconciled and refining definitions to better address current city needs. This review will be done by RDG team members who have worked both as implementors and authors of zoning codes. Findings and recommendations will be assembled as a memorandum that will be provided to City Staff.

### Deliverables:

- Draft plan elements sections
- Associated maps for each plan element
- GIS shapefiles related to the final Future Land Use Plan and Plan Elements
- Final Land Use Plan report for approval by Planning Commission and City Council
- Final Land Use Plan in a poster format

## HOUSING

The goal of this planning process should be to understand the housing needs for every part of Norman to provide a path forward. To achieve this, the planning process focuses on three key components:

- Discovery – studying, listening, and learning
- Defining gaps and establishing strategic goals
- Establishing strategies and actions to move forward

### TASK 1 - DISCOVERY

The Discovery process includes both quantitative and qualitative analysis. Data that is collected will be tested and confirmed against community input to identify the biggest challenges and opportunities facing the community.

#### Citizen Participation/Stakeholder Outreach

The public engagement process for the Housing Strategy will be closely integrated with the broader engagement strategy outlined in the Public Engagement Approach. There are three essential components from the broader community engagement related to the Housing strategy that include:

**Listening Sessions.** As part of the listening sessions outlined in the Public Engagement Plan, we will look to collect local data on the housing market from those who know and understand it best. This will include up to 10 individuals from:

- Builders and developers
- Real estate agents and the lending community
- Public sector – city and community representatives

But we will also want to understand the impact housing is having on:

- Economic development agencies
- Social Service agencies and the populations they represent
- Major employers
- Neighborhood representatives
- College students
- Young professionals
- Senior citizens

**Market Surveys.** A community-wide survey is proposed in the Public Engagement Plan that will inform the Housing Strategy. To avoid a survey that is overly long and to avoid “survey fatigue” we would recommend a very short survey (less than five questions) that would quickly gather additional data on the types of housing desired and market gaps that exist.

We have also developed other housing survey tools that may be beneficial to the process. These include:

- **Workforce Housing Survey.** This survey focuses on employees’ desired living location, what they pay for housing, their current income to assess what they can afford, and if they are over 55, the type of housing they would like in retirement.
- **Landlord Survey.** This survey focuses on understanding of the rental market, specifically, occupancy and rental rates. For these surveys, questions include the number of units, rental rates, vacancy rates, types of support services provided for senior-oriented facilities and general comments on the market.

#### Population & Market Analysis

We will begin with a review of previously completed studies, as well as existing state and local ordinances and policies. This work will be done in conjunction with the Comprehensive Plan and will provide a foundation for

current and future needs that will be used in both studies. For additional examination of the market, we will use a variety of data sources, including:

- American Community Survey and 2020 Census data
- ERSI Community Analyst
- Local building permit data provided by the cities
- County Assessor and Community Development data
- MLS reports for the past three to five years

We understand that many cities with large student populations are questioning the accuracy of the 2020 Census data, therefore the use of locally sourced data will be especially important in understanding the market today and into the future.

### Community Atlas

Understanding where development has been occurring, what that development looks like, and how that matches the demographic and economics of the city will help to define specific policies and strategies at a community and neighborhood level. If detailed data is available for existing housing types, we will map units by type and size to gain a better understanding of the current supply and illustrate where product types, like medium-density units, are occurring already. The objective of this section is to assemble and analyze basic data related to population trends, product types, and the economic health of the city and neighborhoods. Components of this data that can be illustrated in an atlas format or as informative graphics may include:

- Population change
- Migration patterns, including migration and population change by age cohort
- Age composition
- Income distribution
- Employment characteristics
- Social statistics and family composition
- Property values, including relationships between land and improvement value
- Housing characteristics including occupancy, unit density, values, affordability, and condition
- Transit routes and job centers

### Deliverables:

- Summary of Listening Session themes
- Draft population and market assessment report
- Draft community atlas

## TASK 2 - DEFINING GAPS

### Market Assessment

Following the review of demographic and housing data and discussions with stakeholders, we will determine gaps in data that need to be collected or clarified. Traditionally, we use locally provided data, national data sources and our projection modeling to complete housing and economic inventories and forecasts. Variables we use and develop include:

- Population and development forecasts based on demographic trends and development activity
- Development history and construction activity by price and type
- Housing cost trends using the Multiple Listing Service information, sales information, and assessment trends



- Affordability analysis based on the set standard that housing costs should account for only 30% of any household's income
- Projected housing demand for all types of housing with a specific emphasis on cost ranges for the city and region's workforce
- Review of existing housing incentive programs for affordable housing
- Overall number of units needed by 2035
  - o Housing demand by occupancy type
  - o Housing demand by price point, pinpointing housing needs at present and projected
- Land demand by density classification and potentially by site analysis
- Special population demands, including senior housing demand by price and occupancy
- Employment composition and change within the market area, identifying factors that could influence demand generated by predictable population change
- Review of the existing organizational structures in the region, counties, and cities relative to provisions for housing services
- Review of the regulatory environment related to housing construction, including zoning and subdivision regulations

### Opportunity Mapping

Building on this data, our team will complete an on-site field review of housing. This will include the identification of distressed areas, opportunity sites, and new development areas. Ultimately, the purpose of this review is to identify potential development and redevelopment areas across the city and opportunities for policies and regulations that will support the development of a more balanced housing market. This will include context-sensitive infill and redevelopment areas and new development areas with existing or easily provided services. Findings will be combined with citizen feedback to create an Opportunities Map.

### Establishing Strategic Goals

Based on community input, market analysis, and physical assessment of the city, themes and goals will be established. These themes will be organized around opportunities, gaps, and issues.

- *Opportunities.* Identify the opportunities that influence the market, the ability to attract and retain households and support new housing growth.
- *Issues or Gaps.* This section will identify certain gaps or issues at play in the market today that make the delivery of necessary housing products more difficult and begin to lay the groundwork for addressing those issues.

**Strategic Housing Goals.** Based on the identified opportunities and gaps, strategic housing goals will be established that will be addressed through the programs, policies, and partnerships identified in the final phase of the process. These goals should be clearly stated and measurable but also tie to the Comprehensive Plan Goals and Principals.

### Deliverables:

- Draft market analysis/projections
- Draft opportunity map
- Draft issues/opportunities report
- Housing goals

### **TASK 3 - HOUSING STRATEGIES**

The life of the plan exists within the strategies, approaches, and recommendations for fulfilling identified housing needs. Strategies may include or address:

- Gaps in the market
- Organizational and housing delivery systems
- Program approaches
- Strategies for attainable/workforce housing
- Rehabilitation and neighborhood development
- Regulatory approaches and strategies
- Supporting services and other issues

The final report will outline strategies and policies with an implementation strategy that identifies:

- Timeline for implementation
- Responsible parties
- Key partners
- Funding sources

#### **Deliverables:**

- Draft strategies report
- Final Housing Study report for approval by Planning Commission and City Council

## STORMWATER MASTER PLAN

Generally, the scope of services includes updating the City of Norman Stormwater Master Plan (SWMP), building upon previous studies such as the 2009 Stormwater Master Plan (completed by others). This SWMP Update is intended to support the overall community vision and potential development scenarios that are identified through the future land use planning component of the Norman 2045 Comprehensive Plan.

The existing stormwater flows in Norman are generally contained within two basins: the Lake Thunderbird watershed and the Canadian River watershed. Water quality is of particular concern for the City in the Lake Thunderbird watershed City due to its use as a drinking water reservoir and the total maximum daily load (TMDL) requirements issued by ODEQ in 2013. The Canadian River subbasins in Norman are generally fully developed with semi-urban infrastructure with a notable exception in the Ten Mile Flat area. This scope of services will be focused on updating SWMP documents to incorporate changes in technology and data availability since the previous plan was approved and changes in land-use planning as part of the Norman 2045 Comprehensive Plan.

### TASK 1 - PROJECT MANAGEMENT

As part of the Project Management task, Garver will document important decisions discussed in meetings, conferences, coordination, conversations, etc. and send documentation to RDG and the City. Garver will also perform the following services as outlined in subsequent sections as part of this task.

#### Project Coordination

To maintain consistent communications and keep the Owner well-informed on project progress, Garver will provide the following project management services over the project duration:

- Monthly project progress and schedule updates
- Prepare progress payment updates for inclusion with the entire Master Plan payment
- Develop a Project Management Plan, which will include:
  - o Project Schedule coordinated with the overall Master Plan schedule
  - o Project Budget
  - o Change Management plan
  - o Quality Control/Quality Assurance Plan

#### Workshops and Meetings

The following are included with the workshops and meetings noted in subsequent sections and will include agendas, meeting minutes, and action items/status:

- Three (3) intermittent progress meetings with City's Public Works Staff and Garver
- One (1) project kickoff meeting
- One (1) draft SWMP Report workshop with staff
- Final SWMP Report Executive Summary presentation to the Norman City Council
- Up to four (4) update/progress presentations to the Comprehensive Plan Committee during regularly scheduled meetings (in person)

#### Project Kickoff

Garver will conduct a SWMP kickoff meeting with City Staff. This meeting will serve as the beginning of the Stormwater Master Plan Update portion of the Comprehensive Plan. Garver will discuss options for evaluation and planning with the City and work with the City on developing a set of planning criteria. Garver will develop meeting minutes for the kickoff

meeting to be used as a planning guide for the project. Garver will provide a data request to gather necessary information for the project's completion.

## **TASK 2 - DATA COLLECTION AND HYDRAULIC SCREENING**

### **Existing Data Review and Previous Work Summary**

RDG and the City of Norman will provide Garver all information and previous work relative to the stormwater conveyance and quality management systems including:

- Previous stormwater master planning documents and related GIS data (shapefiles and geodatabases)
- Previous stormwater management planning documents and related GIS data
- All Hydrologic or Hydraulic models and reports performed for the City on major streams or received by the City from regulatory agencies
- Stormwater infrastructure record drawings completed since the previous SWMP was initiated in 2007
- Ancillary GIS data base files to include land use, roadways, parcels, structures, topography, stormwater, and other utility infrastructure
- Bridge inventory reports
- Service area planning documents: land usage and transportation plans; census reports; growth projections
- Current Stormwater Capital Improvement Plan including changes since 2009 SWMP
- Stormwater challenge areas identified since 2009 SWMP
- Historical records or data documenting drainage and flooding issues (such as high-water marks or documentation)

Garver will prepare a list of data deficiencies based on information gathered and meet with the Owner to develop a procedure for remaining data procurement or a basis of assumption from which to proceed. Garver will summarize and document all above information as necessary to establish existing system baseline. A record of transmittal will be maintained to assure the return of all Owner documents provided to Garver.

### Hydraulic Screening

- Update major basins and subbasins within the city limits based on updated topographic information
- Assimilate data collected by subbasin, including historic drainage problems and flood data.

Existing FEMA Base Level Engineering (BLE) data will be used to update the Stream Planning Corridor delineation originally developed during the 2009 SWMP. No additional hydraulic modeling will be performed for this task.

## **TASK 3 - DETAILED HYDROLOGY AND HYDRAULICS UPDATES AND SOLUTIONS**

Garver will perform detailed hydrology and hydraulic models for areas within the City limits. This includes updating the hydrology and hydraulic models that were developed during the 2009 SWMP. **Update Hydrologic Models**

Garver will update the hydrologic models developed during the 2009 Stormwater Master Plan. This scope does not include producing hydrologic models from scratch if the 2009 hydrologic models are not provided to Garver in a form suitable for use on a modern computer. Thirty-six (36) subbasins were delineated for the two larger watersheds of Lake Thunderbird and the Canadian River. These subbasin boundaries will be re-delineated using the best publicly available lidar data.

Hydrologic parameters such as land-cover, precipitation, hydrologic reach routing parameters, and reservoir modeling will be evaluated and updated where necessary. Reservoirs in developed areas that have been constructed since the 2009 hydrologic models were developed will be represented to the degree of detail that is available in the provided record drawings. If detention detail is not available in the record drawings, the area may be represented without detention effects

or with a reduced land cover coefficient to represent a reduced design peak flow. Decisions about these locations will be made in conjunction with the City public works department.

The results of the Comprehensive Plan land-use plan will be incorporated into the hydrologic model to determine fully developed (future) flow rates. All other updates to the hydrologic models will be completed in preparation for incorporating the updated Land-Use plan to finalize the full-buildout scenarios.

### Update HEC-RAS Hydraulic Models

Garver will update the detailed HEC-RAS Models developed prior to and during the 2009 SWMP process. Fifty-nine (59) stream miles were included in detailed hydraulic models during the 2009 Plan, and additional detailed models have been performed for the Ten Mile Flat Creek and Brookhaven Creek streams since the 2009 SWMP was published.

These HEC-RAS models will be updated with the modern version of the software produced by the US Army Corps of Engineers. Additionally, the updated flow rates calculated during the hydrologic modeling portion of this plan will be included. The best-available lidar topographic data will be incorporated as well as any provided record drawing information from development along the streams that has been completed since the 2009 SWMP.

## TASK 4 - SOLUTIONS COST ESTIMATES AND CAPITAL IMPROVEMENT PROGRAM

### Develop Opinion of Probable Cost for Identified Solutions

Garver will determine updated costs for carryover solutions from the 2009 SWMP. This task will include updating pay items based on lessons learned during the implementation of the 2009 plan. **Develop Capital Improvement Program for Stormwater Projects.**

Utilizing the updated H&H modeling, Garver and Owner will develop an actionable plan to prioritize stormwater projects in the City. Garver will develop a capital improvements phasing plan (CIP) for the remaining 2009 solutions through a 20-year planning horizon. In effect, this plan will identify the timing and major service triggers of key stormwater capital improvements projects for the planning horizon.

### Hydrology and Hydraulics Detailed Modeling and Capital Improvement Program Technical Memorandum and Workshop

A draft H&H Detailed Modeling and CIP Technical Memorandum (TM) will be delivered to Owner. This TM will summarize the findings of tasks to this point. Following Owner review, Garver will conduct a review workshop with Owner staff, document key decisions and feedback, and issue a final H&H Detailed Modeling and CIP TM based upon those comments. The final H&H Detailed Modeling and CIP TM will be included as an Appendix to the SWMP and utilized for key planning criteria for subsequent tasks. Garver will submit three (3) bound copies of both the draft and final TMs.

## TASK 5 - STORMWATER QUALITY DOCUMENT REVIEW

### Water Quality Protection Review and Documentation

Garver will update the Stormwater Master Plan with stormwater best management practices (BMPs) based on recommendations included in previous studies. Specifically, Garver will:

- Review existing documents relevant to the Stormwater Master Plan and BMPs, including previous stormwater management plans, SWMPs, engineering design criteria, MS4 annual reports, and historical water quality data collected within the City and in Lake Thunderbird watershed.
- Identify existing water quality challenges within the City and Lake Thunderbird and incorporate stormwater quality BMP's identified by previous reports into the updated SWMP Report.

## TASK 6 - STORMWATER MASTER PLAN REPORT

Garver will document the findings of the previous tasks and incorporate Owner review comments into a final report. Following Owner review, Garver will conduct a review workshop with Owner staff, document key decisions and feedback, and issue a final SWMP Report based upon those comments. Garver will submit three (3) bound copies of the final SWMP. The SWMP Report will include the following sections:

- Executive Summary
- State of the City Stormwater Summary
- Summary of Updates to Hydrology and Hydraulic Models
- Capital Improvement Program Review
- Stormwater Quality Review and Documentation

### Topographic Surveys

Topographic Survey is not anticipated for the completion of the Project and not included in this scope of services but may be added as Extra Work. Any information provided by the City to Garver is assumed as correct.

### Geotechnical Services

Geotechnical is not anticipated for the completion of the project and not included in this scope of services. Any information provided by the city to Garver is assumed as correct.

### Environmental Services

Environmental services are not anticipated for the completion of the project and not included in this scope of services. Any information provided by the city to Garver is assumed as correct.

### Project Deliverables

The following will be submitted to the City, or others as indicated, by Garver:

- Three (3) hard copies of the final Stormwater Master Plan Report
- PowerPoint slides of each workshop (pdf format)
- PowerPoint slides and exhibits for public outreach events (pdf format)
- Electronic files as requested.

### Extra Work

The following items are not included under this agreement but will be considered as extra work:

- Rework for the City's convenience or due to changed conditions after previous alternate direction and/or approval
- Submittals or deliverables in addition to those listed herein
- Design, geotechnical, or survey services of any kind
- Bidding or construction phase services of any kind
- Action Plans or design services for proposed projects
- On-site meetings with ODEQ, OWRB, or other regulatory agencies, other than those listed herein
- Water rights, construction, or any other permitting
- Evaluation of plan alternatives in addition to those listed herein

- Financial assistance
- Pilot testing
- Environmental services and documentation, including wetlands identification, mitigation plans, or other work related to environmentally or historically (culturally) significant areas
- Surge/transient analysis
- Computational fluid dynamics (CFD) modeling
- Physical condition assessment
- Water quality sampling and/or testing

Extra Work will be as directed by the City in writing for an additional fee as agreed upon by the City, RDG, and Garver.

## COMPREHENSIVE TRANSPORTATION PLAN

Generally, the scope of services includes the development of a Comprehensive Transportation Plan (CTP) that builds upon previous efforts such as the 2014 Comprehensive Transportation Plan. Given the recency of the existing plan, the current effort shall consist of an update to the 2014 plan. The CTP is intended to support the overall community vision and integrally relate to the future land use component of the build-out scenarios that are identified through the future land use planning component of the Norman Master Plan (NMP).

The goals of the Comprehensive Transportation Plan will be to update the 2014 CTP with new data, incorporating constructed infrastructure, a new look at how people travel since the pandemic, identify new transportation trends and needs, and look at the impacts of previously un-planned events. The CTP will also coordinate with the Oklahoma Department of Transportation's (ODOT) long range transportation plan as well as their current 8-year construction program. The CTP will align with the most recent Long Range Transportation Plan for the Association of Central Oklahoma Governments (ACOG). The plan will provide a multi-modal menu for future projects to accommodate a variety of funding opportunities.

The scope of work for the development of the CTP will be to review the 2014 CTP for updating, specifically looking at what infrastructure improvements have been completed, the impacts of those improvements to Norman's transportation system, evaluate the impacts of planned local, regional and statewide transportation related projects, plan for future transportation projects and cast a vision for transportation in Norman that will work with other planning documents that work for the next 20 years.

## PROJECT MANAGEMENT

Garver will document important decisions discussed in meetings, conferences, coordination, conversations, etc. and send documentation to RDG. Garver will also perform the following services as outlined in subsequent sections as part of this task.

### Project Coordination

To maintain consistent communications and keep the RDG well-informed on project progress, Garver will provide the following project management services over the project duration:

- Monthly project progress and schedule updates and coordination across planning teams
- Prepare progress payment updates for inclusion with the entire Master Plan payment
- Develop a Project Management Plan, which will include:
  - o Project Schedule coordinated with the overall Master Plan schedule
  - o Project Budget
  - o Change Management Plan
  - o Quality Control/Quality Assurance Plan

### Workshops and Meetings

The following are included with the workshops and meetings noted in subsequent sections and will include agendas, meeting minutes, and action items/status:

- One (1) project kickoff meeting (in-person)
- Four (4) intermittent progress meetings with RDG Staff and Garver (virtual)
- Up to four (4) update/progress presentations to the NMP Committee during regularly scheduled meetings (in-person)



- Up to Two (2) public neighborhood workshops or other meetings identified in the public outreach component of the NMP

**Project Kickoff.** Garver will conduct an in-person CTP kickoff meeting with City Staff. Garver will review the scope of work and project schedule with the City and solicit initial input from the City on issues to be addressed in the plan. Garver will develop meeting minutes for the kickoff meeting to be used as a planning guide for the project. Garver will provide a data request to gather necessary information for the project's completion.

**Document Drafting and Control.** Garver will compile the data, findings, mapping, and narrative for the subcomponents of the CTP (roadway, bridge, traffic, multi-modal, parking, transit, and aviation) into a single document to be provided to RDG for incorporating into final draft of the NMP. This item will include an allowance for up to two (2) sets of revisions of the draft CTP.

## **TASK 1 - ROADWAYS**

### **Existing Data Review and Previous Work Summary**

The City will provide RDG & Garver all information and previous work relative to the transportation system for all plan elements:

- Existing Capital Improvements Plan
- ACOG Traffic model
- ACOG Long Range Transportation Plan (Encompass 2045)
- City GIS database (street centerlines, pavement, sidewalks, etc.)
- Existing bridge information/bridge bond data
- Information on Traffic Management Center
- Regional Transportation Authority (RTA) System Plan and other plans
- Go Norman Transit Plan
- Max Westheimer Airport Master Plan
- Norman Parking Study and Parking Strategic Plan
- 2019 Transportation Bond
- I-35 Corridor Study
- Other information that is mutually agreed to be necessary to complete the project

### **Street Network Review**

Garver will verify status of "existing and committed" projects from the 2014 CTP as well as the 2019 Transportation Bond and confirm with the City any remaining committed projects for construction. Based on data developed from the traffic subcomponent of the plan, Garver will identify areas where the functional classification of the street network is inconsistent with future needs established by updates of the ACOG traffic model, applicable standards, and the vision and future land use component of the NMP.

### **Identification of Current and Future Roadway Needs**

Based upon forecasted trends, identified gaps in the street network, street network review, updated traffic modeling, current ACOG Long Range Transportation Plan, and the vision and future land use component of the NMP, Garver will develop a list of future projects for the location of new streets, intersection improvements, and modification/improvement of existing facilities. This list will include rough order of magnitude cost estimation for each recommendation. Garver will

develop a prioritization matrix for projects based on community and City input for up to ten (10) factors that will be used to sort priority as short term and long-term priorities. Additionally, Garver will incorporate analysis of the impact of potential turnpikes and regional transportation on the city street network into identification of these needs.

### Policy Recommendations

In conjunction with traffic subcomponent of this plan, Garver will develop a high-level framework of policy recommendations to consider regarding access management and signal spacing. For example, these recommendations may include standardized signal spacing recommendations and access management policies based on functional classification or supporting future land use.

## TASK 2 - BRIDGES

### Review Bridge Inventory

Garver will review the City's existing inventory of bridges and provide an update to the documentation based on any recent bridge inspections, construction, or improvement projects.

### Bridge Plan Narrative Update

Garver will develop an updated bridge plan narrative in conjunction with stormwater plan element.

## TASK 3 - TRAFFIC

### Data Collection

Garver will use existing data compiled from various sources and any new data provided by the City or RDG.

**Existing Traffic Data.** ODOT historical Annual Average Daily Traffic (AADT) maps which are publicly available online will be tabulated by the Garver Team. This data, along with additional information provided from the ACOG travel demand model and ACOG online GIS, will be used to determine annual growth rates needed to project future volumes. Available turning movement data will be compiled from the City's on-going projects and past Synchro models. The Garver Team will identify current shifts in traffic patterns since the last plan update.

**Google Maps Data.** Typical day data will be evaluated from available Google Maps information. This data will be used to identify corridors that consistently have medium to high traffic delays.

**Geometric Data.** Information from Google Earth, as-built plans from the City, and any new construction plans will be reviewed by the Garver Team to determine the existing or proposed geometry along corridors and at intersections in the City of Norman.

**Safety Data.** The Garver Team will compile the crash data made available by the City for up to a 5-year period based on City direction.

### Traffic Volume Projections and Utilization of Travel Demand Model

Garver will use the collected data and the information compiled to produce balanced (where needed) traffic volumes for 2023. These volumes will be projected to future year (2050) using historical annual growth rates, trip generation rates for committed projects, and the ACOG Travel Demand Model (ACOG TDM). Garver will utilize the ACOG TDM as one of the tools for projecting traffic volumes to the year 2050.

### Operational/Geometric Analyses

Using high-level capacity analysis techniques based on tabular information, Synchro analyses, and Google Maps, the Garver Team will identify capacity problems along the identified corridors for both existing conditions and future 2050 conditions.

Corridor and overall intersection Level of Service (LOS) will be evaluated for major routes. Synchro software will be used at the intersections to perform operational analyses on the identified signalized intersections throughout the City. Identified locations will be compiled for further analysis purposes to determine improvements (such as additional turn lanes or widening) to address congestion within the City.

### Safety Analysis

For safety analysis, graphics will be developed showing the crashes identified by type and severity. These maps will be analyzed to determine if there are any crash clusters or prevailing trends in the study area. Countermeasures will be identified to reduce the collisions occurring within the City. Additionally, crash rates will be developed to identify locations where the crash rates are greater than the state-wide average for a similar facility.

### Additional Services

Dependent on the information received, the following items will be incorporated into the CTP:

**Potential Turnpike Analysis.** Detailed analysis of traffic volume changes and impacts from proposed turnpikes will be conducted

**Traffic Management Center and Emergency Operations Center.** Operations identified to these two known developments within the City will be incorporated and included within the CTP.

### Documentation of Traffic and Safety – Preliminary Analysis

The results of the traffic analyses will be documented in a report format to include within the CTP. Preliminary findings and necessary graphics/tables will be included in the documentation.

## TASK 4 - ACTIVE TRANSPORTATION

The primary objective of this task will be update and reconcile previous planning efforts surrounding active transportation for Norman. These include the OU Bicycle Plan, Greenways component of the updated Norman Parks and Recreation Master Plan, Norman Greenways Master Plan, Go Norman Transit Plan, and the Norman Comprehensive Transportation Plan.

### Sidewalk and Active Transportation Inventory Update

Garver will obtain from the City, the existing sidewalk inventory. An update of this data will be provided from aerial imagery analysis. Using data provided by the Owner, City, RDG and Garver will inventory existing active transportation facilities including side paths, greenways, shared roadways, bus stops, bike lanes, and protected bike facilities.

### Active Transportation Assessment and Update

RDG and Garver will examine the plans referenced for this task to reconcile these plans and provide recommended updates for any routing locations based on access to major destinations, user comfort, safety, bus routes/stops, and connection of existing facilities. In addition, e-scooter data will be gathered as available to use in assessing usage of facilities.

### ADA Compliance

Garver will reference the City's existing ADA Self-Evaluation and Transition Plan to inform provisions of the CTP.

### Active Transportation Projects

RDG & Garver will develop a list of future active transportation projects based on priority criteria established with the City. This list will include rough order of magnitude cost estimation for each recommendation. Garver will use the City's prioritization matrix for the projects to sort project priority for short term and long term.

## **TASK 5 - PARKING AND TRANSIT**

### **Parking Inventory and Updates**

Garver will incorporate the findings and provisions of the 2016 Parking Study and the 2018 Parking Plan into the CTP. This will include coordination between the City and Cleveland County, identifying any long range plans that the county has for parking facilities. **Local and Regional Transit**

Garver will incorporate the findings and provisions of the Go Norman Transit Plan, RTA System Plan, and ACOG's Encompass 2045 into the CTP. This will include coordination between the City, OUT Campus Area Rapid Transit (CART), and EMBARK. The work will identify any additional interagency coordination needed to accommodate future developments and operational needs between the agencies and may provide recommendations for any findings in the Go Norman Transit Plan which may have since been determined to need revision. Recommendations that should be reviewed and potentially revised should include, but are not limited to, phasing of improvements in regards to route expansion and increased route frequency. Lastly, Transit Oriented Development (TOD) will be considered and included in the Comprehensive Plan, as appropriate, with a connection back to the CTP.

## **TASK 6 - AVIATION**

### **Existing Master Plan Review**

Garver will incorporate the existing master plan for Max Westheimer Airport and incorporate the plan's provisions into the CTP.

### **Planning Recommendations**

Based on review of the existing master plan and consultation with stakeholders, Garver will provide recommendations on land use policies and actions necessary to protect Max Westheimer Airport for future growth including for possible fixed-based operators, private hangars, expansion areas, aviation academic opportunities or other private development. Specifically, Garver will examine if current airport zoning requirements are adequate for the airport.

# WATER HYDRAULIC MODELING UPDATE AND REPORT

Generally, the scope of services includes the development of a Water Hydraulic Modeling Update and Report (Water Update) consistent with the Master Plan effort. This Water Hydraulic Modeling Update will support build-out scenarios for future land use and reinforce planned growth areas under the Comprehensive Plan.

It is understood that water supply assumptions will be based on the 2060 Strategic Water Supply Plan (SWSP, completed by others). Hydraulic modeling will be completed in the Innovyze InfoWater Pro software. This scope of services will be focused on hydraulic capacity and key associated factors (e.g., water age, source trace); it is understood that condition assessments and asset management will not be a focus of this effort.

## TASK 1 - PROJECT MANAGEMENT

As part of Task 1, Garver will document important decisions discussed in meetings, conferences, coordination, conversations, etc. and send documentation to RDG, the City, and committees assisting in the comprehensive planning process. Garver will also perform the following services as outlined in subsequent sections as part of Task 1.

### Project Coordination

To maintain consistent communications and keep the City well-informed on project progress, Garver will provide the following project management services over the project duration:

- Monthly Water Update project progress and schedule updates
- Prepare progress payment updates for separate payment by the Utilities Department of the City
- Develop a Water Update-specific Project Management Plan, which will include:
  - o Water Update Schedule coordinated with the overall Comprehensive Plan schedule
  - o Water Update Task Budget
  - o Water Update Change Management Plan
  - o Water Update Quality Control/Quality Assurance Plan

### Workshops and Meetings

The following are included with the workshops and meetings noted in subsequent sections and will include agendas, meeting minutes, and action items/status:

- Intermittent progress meetings with City's Utilities Staff and Garver
- One (1) Project Kickoff meeting
- One (1) Baseline Development Workshop
- One (1) Distribution System Update Workshop
- One (1) Hydraulic Model Evaluations Workshop
- One (1) Water Supply Plan Review Workshop
- One (1) Cost Analysis and Project Prioritization Workshop
- One (1) draft Water Hydraulic Model Update Report Workshop
- Four (4) update/progress presentations to the Comprehensive Plan Committee and/or Subcommittee during regularly scheduled meetings (in person)
- Final Water Hydraulic Model Update Report presentation to the Norman City Council

## Project Kickoff

Garver will conduct a Water Update kickoff meeting with City Staff and Steering Committee representatives. This meeting will serve as the beginning of the Water Update portion of the Comprehensive Plan. Portions of the Water Update will begin following the completion of components of the Comprehensive Plan, such as the land use and growth areas. Garver will discuss options for evaluation and planning with the City and work with the City on developing a set of planning criteria. Garver will develop meeting minutes for the kickoff meeting to be used as a planning guide for the project. Garver will provide a data request to gather necessary information for the project's completion.

## TASK 2 - BASELINE DEVELOPMENT

### Existing Data Review and Previous Work Summary

As part of the data request, the City will provide Garver and RDG all information and previous work relative to the water supply and water distribution systems including:

- Previous water supply and water distribution system master planning documents
- Water supply, conveyance, water treatment infrastructure, and water distribution system facility record drawings
- Electronic water/wastewater usage and billing data
- Geocoded water meter shapefile
- Ancillary GIS data base to include land use, roadways, parcels, structures, topography, water, wastewater, stormwater, and other utility infrastructure
- Water/wastewater utility infrastructure inventory reports
- Previous service area planning documents: land usage and transportation plans; census reports; growth projections; water demand projections
- Current Utility Capital Improvement Plan
- Rate/fee structures: residential, commercial, inside and outside city limits
- Outside service contracts
- Monthly Operating Reports for the water system from the last ten (10) years
- Historical system SCADA data for the last five (5) years, including pump flow, pump status/speed, pump suction and discharge pressure, and tank levels
- Distribution system water quality data
- Water loss data
- Reports of historical complaint/problem areas

Garver will prepare a list of data deficiencies based on information gathered and meet with the City to develop a procedure for remaining data procurement or a basis of assumption from which to proceed. Garver will summarize and document all above information as necessary to establish existing system baseline. A record of transmittal will be maintained to assure the return of all City documents provided to Garver.

### Water Distribution System Facility Review

Garver will meet with City's staff to review operation of the water distribution system facilities. It is assumed that this meeting will occur at the City's office and will not include a site visit to all distribution pumping or storage facilities.

### Historical Water Demand Analysis

Garver will establish the existing annual average, maximum day, and peak hour water demands as derived from historical water usage information and billing data provided by the City. Garver will also assess water usage for different types of users within the distribution system and historical water loss information provided by the City.

### Projected Water Demand Summary

Based upon historical data, population projections provided by others, and future land use planning documents provided by others, Garver will develop future water demand projections and growth projections to establish the expected annual average and maximum day water system demands through the 2060 horizon.

### Evaluation and Design Criteria

Garver will develop evaluation and design criteria based on criteria used in previous City studies, City standards, ODEQ rules and regulations, and industry standards.

### Water Quality Data Analysis

Garver will review historical water quality data (including entry point water quality and system-wide disinfectant residual, disinfection byproduct, nitrification monitoring, and lead/copper data), current Nitrification Monitoring and Response Plan, and Revised Total Coliform Rule (RTCR) Sampling Plan, if available. Garver will interview City staff regarding typical water quality monitoring practices and areas of the distribution system with water quality challenges.

### Baseline Development Technical Memorandum and Workshop

A draft Baseline Development Technical Memorandum (TM) will be delivered to the RDG and the City. This TM will summarize the findings of Task 2. Following City review, Garver will conduct a review workshop with City staff, document key decisions and feedback, and issue a final Baseline Development TM based upon those comments. The final Baseline Development will be included as an Appendix to the Water Hydraulic Model Update Report, and utilized for key planning criteria for subsequent tasks. Garver will submit three (3) bound copies of both the draft and final TMs.

## TASK 3 - DISTRIBUTION SYSTEM HYDRAULIC MODEL UPDATE

### Hydraulic Model Update

Garver will update the City's existing water distribution system hydraulic modeling using the InfoWater Pro software. This update will include reviews and updates associated with the distribution system pipe network, storage tank attributes and controls, pump station attributes and controls, groundwater wells, and demands.

#### Field Data Collection

Garver will develop a field data collection plan outlining the use of hydrant pressure loggers and hydrant flow tests to collect data for calibration and validation of the hydraulic model. Garver will furnish up to twelve (12) hydrant pressure loggers for deployment in the distribution system. Garver will support City's staff in installation of the loggers at two sets of locations to collect pressure data for up to two (2) weeks total (one week at each set of locations). Garver will support the City's staff with performing hydrant flow tests. It is assumed that two (2) Garver staff members will be present for four (4) days of logger deployment, hydrant flow testing, and logger collection. This testing will be targeted during summer months with peak demands present.

#### Model Calibration and Validation

Garver will complete hydraulic model calibration and validation based on SCADA data and hydrant pressure logger data from the field data collection. Garver will utilize both extended-period simulations (EPS) and steady-state simulations to assess the calibration of the distribution system hydraulic model.

## Existing System Model Evaluation

Garver will complete hydraulic model evaluations for the existing system for average and maximum day conditions.

## Distribution System Hydraulic Model Update Technical Memorandum Workshop

Garver will present the findings of Task 3 in a Distribution System Hydraulic Model Update TM. The TM will be presented to Utilities Staff in a draft form. City comments will be received and reviewed in a TM review workshop, after which the TM will be finalized and included as an Appendix to the Water Hydraulic Model Update Report. Garver will submit three (3) bound copies of both the draft and final TMs.

## TASK 4 - HYDRAULIC MODEL EVALUATIONS

### Hydraulic Model Evaluations

Garver will complete hydraulic model evaluations for planning horizons through full build-out, including four (4) intermediate horizons to support development of a Capital Improvements Plan (CIP) and project prioritization (although more horizons will likely be screened but not ultimately reported in the CIP). The distribution system will be evaluated against criteria developed in Task 2, and improvements will be identified to address system deficiencies at each horizon.

### Infrastructure Risk Assessments

Garver will screen for the higher risk conditions potentially present and conduct risk assessments for ten (10) scenarios to determine how to mitigate risk associated with infrastructure that is critical to the water distribution system. Garver will determine the scenarios to be analyzed in conjunction with the City; a scenario consists of a set of one or more infrastructure components being removed from service and a specific horizon and demand condition. For example, one scenario could be the existing system under maximum day conditions with the loss of the Brookhaven EST.

### Hydraulic Model Evaluations Technical Memorandum and Workshop

Garver will present the findings of Task 4 in a Hydraulic Model Evaluations TM. The TM will be presented to Utilities Staff in a draft form. City comments will be received and reviewed in a TM review workshop, after which the TM will be finalized and included as an Appendix to the Water Hydraulic Model Update Report. Garver will submit three (3) bound copies of both the draft and final TMs.

## TASK 5 - WATER SUPPLY PLAN UPDATE

Garver will review the 2060 Strategic Water Supply Plan (SWSP) and evaluate the need to update that supply plan. The focus of this task item will be evaluating projections and assumptions used in development of the SWSP based on updated data. The purpose of this evaluation will be to identify changes since development of the SWSP that would potentially change the preferred path forward for implementation of the SWSP. For example, significant changes to project water demands may impact timing of adding new source components. Specifically, Garver will review the following items, summarize discrepancies, and make recommendations associated with regard to potential update of the SWSP:

- Population and growth projections
- Historical water demands
- Projected water demands
- Capital costs
- Life-cycle costs



- Existing and planned future sources (Lake Thunderbird, Garber-Wellington Aquifer wells, Oklahoma City, indirect potable reuse and/or direct potable reuse and/or direct potable reuse)

Garver will present the findings of Task 6 in a Water Supply Plan Review TM. The TM will be presented to Utilities Staff in a draft form. City comments will be received and reviewed in a TM review workshop, after which the TM will be finalized and included as an Appendix to the Water Hydraulic Model Update Report. Garver will submit three (3) bound copies of both the draft and final TMs.

As part of the North Water Reclamation Facility (WRF) evaluation included in the Wastewater Master Plan, Garver will also evaluate the implications associated with the North WRF serving as a source of potable reuse effluent. This evaluation will be completed in conjunction with the ongoing Lake Thunderbird Indirect Potable Reuse (IPR) Pilot Project (currently being completed by Garver, in the pilot reporting phase). Further, Garver will evaluate up to two (2) alternatives for other One Water opportunities, such as stormwater capture downstream of Lake Thunderbird and/or constructing a new reservoir for the City of Norman. Garver will work with City staff to identify the preferred list of alternatives. It is anticipated that Garver will evaluate the following items as part of this effort. Note that each alternative listed below will be recommended with either the existing WRF or a new North WRF, pending the results of prior evaluations in the Wastewater Master Plan:

- Additional treatment improvements anticipated to be required for IPR, as identified in the Lake Thunderbird IPR Pilot Report
- Additional treatment improvements anticipated to be required for Direct Potable Reuse (DPR)
- One (1) alternative for stormwater capture and reuse either within the current City limits or downstream of Lake Thunderbird
- One (1) alternative for construction of a new reservoir within Norman City limits or downstream of Lake Thunderbird

Note that a combination of alternatives may be identified as the most feasible approach. Garver will evaluate strengths and limitations for each alternative, and conceptual phase OPCCs will be developed. Each alternative will be evaluated based upon estimated annual O&M costs and net present worth value for a 20-year period. The conceptual cost estimate will be a Class 4 estimate as defined by the Association for the Advancement of Cost Engineering (AACE), which is consistent with cost estimates developed for studies and feasibility. The expected accuracy range for the estimates is -30% to +50% of the estimated values.

These alternatives will be compared to the present worth effectiveness of implementing an IPR or DPR treatment train using the existing WRF (as identified in the Lake Thunderbird IPR Pilot Report); O&M costs developed from previous studies on the WRF will be used for this comparison and will be updated to reflect the same time-value of money as the alternatives.

## **TASK 6 - COST ANALYSIS AND PROJECT PRIORITIZATION**

Garver will develop conceptual costs for each of the capital improvements identified through the hydraulic model evaluations in Task 4. Garver will develop and evaluate life-cycle costs associated with alternatives for five (5) specific projects where potential alternatives have varying capital and operation and maintenance (O&M) requirements warranting life-cycle cost evaluations. The conceptual cost estimates will be a Class 4 estimate as defined by the Association for the Advancement of Cost Engineering (AACE), which is consistent with cost estimates developed for studies and feasibility. The expected accuracy range for the estimates is -30% to +50% of the estimated values.

Garver will identify project triggers based on factors developed in coordination with City staff (such as regulatory, capacity, water quality, condition, operability, and development). As noted previously, condition assessment and asset management are not included in this study. Therefore, condition-related improvements will be limited to City-directed projects.

Garver will prioritize projects based on the type and timing associated with the project triggers.

Garver will present the findings of Task 7 in a Cost Analysis and Project Prioritization TM. The TM will be presented to Utilities Staff in a draft form. City comments will be received and reviewed in a TM review workshop, after which the TM

will be finalized and included as an Appendix to the Water Hydraulic Model Update Report. Garver will submit three (3) bound copies of both the draft and final TMs.

### **TASK 7 - CAPITAL IMPROVEMENT PROGRAM QUALITY AND COST OF SERVICE UPDATE**

Using the findings of previous tasks, Garver will develop a CIP through a 20-year planning horizon. This plan will identify the timing and triggers for key water system capital improvements projects for the planning horizon.

### **TASK 8 - WATER HYDRAULIC MODEL UPDATE REPORT**

Garver will document the findings of the previous tasks (including City review comments) into a final report. Garver will submit a Draft Water Hydraulic Model Update Report for review by the City. Following City review, Garver will conduct a review workshop with City staff, document key decisions and feedback, and issue a Final Water Hydraulic Model Update Report based upon those comments. Garver will submit three (3) bound copies of both the Draft and Final Water Hydraulic Model Update Report.

### **TASK 9 – PUBLIC INFORMATION AND ENGAGEMENT**

During the development of the Comprehensive Plan, Garver understands that there will be numerous opportunities for public meetings, pop-up events, and other public outreach events. Coordination and attendance of these public meetings are accounted for in RDG's scope of services.

Garver will present the Water Hydraulic Model Update Report executive summary and recommended CIP to City staff. Garver will make any necessary revisions to the executive summary and CIP resulting from City comments. Once adopted by City staff, Garver will give a single presentation to the Norman City Council in a combined update with the Wastewater Master Plan. Garver will coordinate this presentation through City staff.

### **TASK 10 - PROJECT DELIVERABLES**

The following will be submitted to the City, or others as indicated, by Garver:

- Three (3) hard copies of the draft and final Baseline Development TM
- Three (3) hard copies of the draft and final Distribution System Update TM
- Three (3) hard copies of the draft and final Hydraulic Model Evaluations TM
- Three (3) hard copies of the draft and final Water Supply Plan Review TM
- Three (3) hard copies of the draft and final Cost Analysis and Project Prioritization TM
- Three (3) hard copies of the draft and final Water Hydraulic Model Update Report
- Powerpoint slides of each workshop (pdf format)
- Powerpoint slides and/or exhibits for public outreach events
- Electronic files (pdf, Word, Excel, and PowerPoint) for all documents
- Updated Hydraulic Model files in electronic format
- GIS Electronic files of proposed capital improvements, deficient infrastructure, average and peak day model results, and other information requested by the City related to model results

## **ADDITIONAL SERVICES**

Additional services are services that may be necessary for completion of the project (or deemed as necessary and authorized by the City) but are not included within this Scope of Services. These services can be added by amendment for an additional fee as agreed to by the City and Garver.

### **Supplemental Water Supply Plan Development**

If deemed necessary, Garver can provide additional or supplemental services associated with Task 5 – Water Supply Plan Update. These may include additional evaluations not expressly listed under Task 5, public engagement tasks, or other services as needed.

## **EXTRA WORK**

The following items are not included under this agreement but will be considered as extra work:

- Rework for the City's convenience or due to changed conditions after previous alternate direction and/or approval
- Submittals or deliverables in addition to those listed herein
- Design, geotechnical, or survey services of any kind
- Field data collection and/or pressure logging
- Model calibration and/or validation
- Bidding or construction phase services of any kind
- Action Plans or design services for proposed projects
- On-site meetings with ODEQ, OWRB, or other regulatory agencies, other than those listed herein
- Water rights, construction, or any other permitting
- Evaluation of plan alternatives in addition to those listed herein
- Financial assistance
- Pilot testing
- Environmental services and documentation, including wetlands identification, mitigation plans, or other work related to environmentally or historically (culturally) significant areas
- Surge/transient analysis
- Computational fluid dynamics (CFD) modeling
- Physical condition assessment
- Water quality sampling and/or testing

Extra Work will be as directed by the City in writing for an additional fee as agreed upon by the City, RDG, and Garver.

# WASTEWATER MASTER PLAN

Generally, the scope of services includes the development of a Wastewater Master Plan (WWMP) that builds upon previous studies such as the 2018 Wastewater Flow Monitoring and Modeling Report (completed by others). This WWMP is intended to support the overall community vision and potential build-out scenarios that are identified through the future land use planning component of the Comprehensive Plan.

The existing sewer flows within the Norman sewer shed are generally contained within two basins: the Lake Thunderbird basin and the Canadian River Basin. The collection system consists of gravity interceptors and collectors, lift stations, and force mains that currently convey all wastewater from both basins to the existing Water Reclamation Facility (WRF). This scope of services will be focused on identifying capital improvements to the collection and treatment systems and triggers for said improvements to support future service areas identified in the Comprehensive Plan.

## TASK 1 - PROJECT MANAGEMENT

As part of Task 1, Garver will document important decisions relative to the WWMP discussed in meetings, conferences, coordination, conversations, etc. and send documentation to the City and committees assisting in the comprehensive planning process. Garver will also perform the following services as outlined in subsequent sections as part of Task 1.

### Project Coordination

To maintain consistent communications and keep the City well-informed on project progress, Garver will provide the following project management services over the project duration:

- Monthly WWMP project progress and schedule updates
- Prepare progress payment updates for separate payment by the Utilities Department of the City
- Develop a WWMP specific Project Management Plan, which will include:
  - o WWMP schedule coordinated with the overall Comprehensive Plan schedule
  - o WWMP task budget
  - o WWMP change management plan
  - o Quality Control/Quality Assurance (QA/QC) plan

### Workshops and Meetings

The following are included with the workshops and meetings noted in subsequent sections and will include agendas, meeting minutes, and action items/status:

- Intermittent progress meetings with City's Utilities Staff and Project Team
- One (1) project kickoff meeting
- One (1) Baseline Development workshop with staff
- One (1) Collection System Modeling and Evaluation workshop with staff
- One (1) Discharge Modeling workshop with staff
- Up to one (1) Treatment and Reuse Evaluation workshop with staff (anticipated to be in combination with one of the Water Master Plan workshops)
- One (1) draft WWMP Report workshop with staff
- Four (4) update/progress presentations to the Comp Plan Committee or subcommittee during regularly scheduled meetings (in person)

- Final WWMP Report Executive Summary presentation to the Norman City Council

### Project Kickoff

Garver will conduct a WWMP kickoff meeting with City Staff, Steering Committee, and Subcommittee representatives. This meeting will serve as the beginning of the WWMP portion of the Comprehensive Plan. Portions of this plan will begin following the completion of components of the Comprehensive Plan such as the land use and growth areas. Garver will discuss options for evaluation and planning with the City and work with the City on developing a set of planning criteria. Garver will develop meeting minutes for the kickoff meeting to be used as a planning guide for the project. Garver will provide a data request to gather necessary information for the project's completion.

## TASK 2 – BASELINE DEVELOPMENT

### Existing Data Review and Previous Work Summary

As part of the data request, City will provide Garver all information and previous work relative to the wastewater collection and treatment systems including the following as available:

- Previous wastewater master planning documents
- Collection, conveyance, and treatment infrastructure record drawings as requested (except for the existing the WRF)
- Electronic water/wastewater billing data for the last 5 years
- Ancillary GIS data base to include land use (current), roadways, parcels, structures, topography, water/wastewater and other utility infrastructure
- Water/wastewater utility infrastructure inventory reports (if available)
- Current Utility Capital Improvement Plan
- Rate/fee structures: residential, commercial, inside and outside city limits
- Outside service contracts
- Monthly Operating Reports for the wastewater system from the last three years
- Lift station SCADA data from the last three years (if unavailable to be pulled by Garver from the SCADA system)

Garver will prepare a list of data deficiencies based on information gathered and meet with the City to develop a procedure for remaining data procurement or a basis of assumption from which to proceed. Garver will summarize and document all above information as necessary to establish existing system baseline. A record of transmittal will be maintained to assure the return of all City documents provided to Garver.

### Historical Wastewater Flow Analysis

Garver will establish the existing annual average, maximum month, and peak wastewater flows as derived from historical wastewater information and billing data provided by the City. Garver will also assess historical rainfall data to develop the relationship between rainfall events and rainfall-derived infiltration and inflow (RDII) flows in the collection system. Garver will develop design storms for the 2-yr, 5-yr, and 10-yr recurrence intervals using information from NOAA Atlas 14. Design storms will be developed for a 24-hr duration event. Garver will project maximum day and peak flows associated with each design storm.

### Flow Monitoring

Garver understands that City will provide flow and rainfall monitoring data, based on work completed by others outside of this scope of services. Garver will coordinate with City's flow and rainfall monitoring provider to identify up to 25 temporary

flow monitoring sites and seven temporary rainfall monitoring sites. It is anticipated that City's flow monitoring provider will procure, install, maintain, and collect data from the flow monitoring installations over a 90-day period. Following data collection, City's flow monitoring provider will compile, review, and process flow and rainfall monitoring data for the monitoring period, including quality control.

Garver will delineate sewer sub-basins based on the existing collection system layout, topographic information, and system planning area boundaries; analysis will be limited to sub-basins in the Lake Thunderbird and Canadian River basins. Upon receipt of the flow and rainfall monitoring data, Garver will develop tabular and graphical data summaries, including average and peak flow for dry weather conditions and total and peak rainfall-derived infiltration and inflow associated with wet weather events. Garver will rank the sub-basins based on RDII characteristics and develop projected peak flows associated with the 2-yr, 5-yr, and 10-yr design events at each flow monitoring location. Finally, Garver will document the processes, results, and recommendations associated with the flow and rainfall monitoring.

### **Projected Wastewater Demand Summary**

Based upon historical data, population projections provided as part of this Comp Plan effort, and future land use planning documents provided as part of this Comp Plan effort, Garver will develop future wastewater flow projections to establish the expected dry weather, annual average, and wet weather design storm flows through the 2045 planning horizon. Land use and population projections will be developed as part of the Comprehensive Planning effort included as part of this overall project. This information will be used to determine infrastructure required for proposed sewer service areas. Consideration will also be granted for areas outside the 2045 planning horizon that could potentially contribute flow to the system. Significant industrial user surveys are not included with this scope, but industrial land use areas will be estimated from the future land use planning process.

### **Baseline Development Technical Memorandum and Workshop**

A draft Baseline Development Technical Memorandum (TM) will be delivered to City. This TM will summarize the findings of Task 2. Following City review, Garver will conduct a review workshop with City staff, document key decisions and feedback, and issue a final Baseline Development TM based upon those comments. The final Baseline Development will be included as an Appendix to the WWMP and utilized for key planning criteria for subsequent tasks. Garver will submit three (3) bound copies of both the draft and final TMs.

## **TASK 3 - COLLECTION SYSTEM MODELING AND EVALUATION**

As part of Task 3, Garver will evaluate long-term alternatives for optimizing the wastewater collection system as the future land use scenarios identified in the Comprehensive Plan are realized.

### **Hydraulic Model Update**

- Incorporate projections for development in each sewer sub-basin at four (4) intermediate horizons and ultimate buildout based on planning information from others.

As part of the Hydraulic Model Update effort, Garver will accomplish the following:

- Update the hydraulic model based on existing wastewater system GIS and record drawings to update the existing system model.
- Incorporate current design plans for new infrastructure into the hydraulic model.
- Assess sub-basin flow information in the hydraulic model.
- Develop average and wet weather loading scenarios for each planning horizon. It is assumed that planning horizons will be existing, full buildout, and four (4) additional intermediate horizons per Garver's recommendations. These future scenarios will be based on planning information from others.

- Assess the system at each planning horizon under dry weather conditions and wet weather design storm events.
- Identify system components without sufficient hydraulic capacity at each horizon. The capacity of the existing WRF will be based on information in previous studies.
- Identify sizing for new infrastructure to address hydraulic capacity deficiencies; sizing will be based on full buildout flow requirements.

### Lift Station Optimization

Garver will assess the existing wastewater collection system information and topographic information to identify alternatives for gravity bypass of existing lift stations and identify future regional lift station locations. Garver will conduct the following as part of this effort:

- Complete a desktop evaluation of the gravity bypass corridor for each of the lift stations identified as feasible candidates. This desktop evaluation will include an assessment of aerial imagery, topographic information, wetlands information, existing easements, and parcel information. Survey or field data collection to confirm elevations of existing manholes, wet wells, inverts, pipe flowlines is not included in this scope.
- Evaluate the lift station and force main capacity for each lift station and flow information for each planning horizon to identify constraints on timing of lift station bypass. Specifically, Garver will identify when lift station and/or force main upgrades would be necessary to accommodate future flows (trigger for implementation of the lift station bypass) and will identify capacity limitations downstream that may impact the ability to install the gravity bypass.
- Incorporate lift station elimination into the CIP for the WWMP.
- Based on the basin delineation in the previous task, identify areas that would require small lift stations and identify future regional lift station locations to provide service to future growth areas.

### Collection System Alternatives Evaluation

Garver will evaluate long-term alternatives for building the collection system to meet future land use areas and convey wastewater flows to either the existing WRF or a future, potential North WRF (discussed further in Tasks 4 and 5). As part of this effort, Garver will screen several alternatives but only conceptually develop two (2) alternatives for long-term continued conveyance of flows from the collection system to the existing WRF. These alternatives may include conveyance of all the flow from the Little River basin to the existing WRF or conveyance of only a portion of the flow from the Little River basin to the existing WRF, depending on the available capacity of the existing WRF and the projected flows for the Little River basin.

Further, Garver will screen several alternatives and conceptually develop two (2) alternatives to eliminate all transfers of flow from the Little River basin to the existing WRF. These alternatives would include construction of a new WRF to receive flows from the Little River basin.

Garver will develop infrastructure improvements for each alternative. These improvements will be limited to lift stations, force mains, gravity bypass lines, and interceptors required for conveyance of wastewater flows to complete alternatives evaluation. Garver will identify the sizing and projected timing associated with each improvement.

Garver will evaluate strengths and limitations for each alternative, and conceptual phase opinions of probable construction costs (OPCCs) will be developed. Each alternative will be evaluated based upon estimated annual operating and maintenance (O&M) costs and net present worth value for a 20-year period. The conceptual cost estimate will be a Class 4 estimate as defined by the Associate for the Advancement of Cost Engineering (AACE), which is consistent with cost estimates developed for studies and feasibility. The expected accuracy range for the estimates is -30% to +50% of the estimated values.

## Collection System Modeling and Evaluation Technical Memorandum and Workshop

Garver will present the findings of Task 3 in a Collection System Modeling and Evaluation TM. The TM will be presented to Utilities Staff in a draft form. City comment will be received and reviewed in a TM review workshop, after which the TM will be finalized and included as an Appendix to the WWMP. Garver will submit three (3) bound copies of both the draft and final TMs.

## TASK 5 - TREATMENT AND REUSE EVALUATION

### Wastewater Treatment Evaluation

The water quality modeling and discharge requirements recommendations, as well as the results of the flow projection efforts, will be used to develop the planning criteria for flow and treatment for a new, potential North WRF at the potential discharge location(s). In consideration of these criteria, Garver will detail conceptual phase evaluations for the treatment and operation support facilities that are instrumental in the proposed WRF to reliably achieve the forecasted requirements. This conceptual evaluation for two (2) proposed sites will identify a phased delivery approach for the facility to address growth in capacity and identify evolving discharge requirements over the planning period.

Using information obtained from Tasks 3 and 4, a list of potential sites will be screened to two (2) conceptual sites for further evaluation. Refer to discussion below for developing these conceptual sites. As part of the base scope of services, one site will be developed in further detail (described below in Section 5.1.1); additional sites can be added as Additional Services. The conceptual site evaluation of the two shortlist sites will detail master planning and site development including:

- “Good Neighbor” features (see Good Neighbor section below)
- Conceptual environmental assessment requirements
- Conceptual phase geotechnical requirements
- Access and transportation improvement, flood protection, and site drainage
- Electrical power supply requirements

**Treatment Train Recommendation.** Based on the results of the water quality modeling and discharge requirements of the locations, Garver will recommend a treatment system to be used in alternatives evaluations for potential plant site locations and discharge locations in order to compare a new WRF to continued wastewater treatment to the existing WRF. As part of the comparison to the existing WRF, Garver will conduct a gap analysis of the hydraulic and treatment capacity of the existing WRF in relation to the established planning criteria. Garver will present the recommendation for the evaluated treatment train for the North WRF and capacity gaps at the existing WRF to City for confirmation prior to further evaluation.

The conceptual phase analysis will also evaluate the following elements for one (1) of the proposed sites and configuration for a conceptual phase level effort (more sites can be evaluated per Additional Services and can be initiated upon approval of amendment by City). Garver will provide a conceptual layout and conservative technology recommendation (no alternatives evaluation) for the single preferred site and the following components:

- Phased expansion strategy for 10-, 20-year, and full build-out planning periods
- New site civil plan
- Liquid treatment scheme
  - o Influent pump station
  - o Headworks including screening and grit removal
  - o Primary clarifiers



- Diffused air aeration basins and upstream anaerobic/anoxic zones (if needed based on discharge requirements)
- Secondary clarifiers
- Cloth disk filters (if needed based on discharge requirements)
- UV Disinfection
- Post-aeration
- Utility routing and service to plant site
- Effluent pumping facilities, effluent piping and routing, effluent discharge facilities
- Solids processing and treatment scheme
  - Anaerobic digestion
  - Dewatering
  - Class A biosolids

Garver will evaluate strengths and limitations for the conceptual site layout, and conceptual phase OPCCs will be developed. The evaluation will include estimated annual O&M costs and net present worth value for a 20-year period. The conceptual cost estimate will be a Class 4 estimate as defined by the Associate for the Advancement of Cost Engineering (AACE), which is consistent with cost estimates developed for studies and feasibility. The expected accuracy range for the estimates is -30% to +50% of the estimated values.

These alternatives will be compared to the present worth effectiveness of the existing WRF to treating this flow; O&M costs developed from previous studies on the WRF will be used for this comparison and will be updated to reflect the same time-value of money as the alternatives.

**Good Neighbor Evaluation.** The siting of a new WRF needs to address the concerns generated by the neighboring community, with a special emphasis upon the adjacent property owners and nearby businesses which may feel that their property value and standard of living may be adversely affected by the operation of a nearby water reclamation operation. The general concepts related to “NOT IN MY BACK YARD, OR NIMBY” opinions and social positions will be discussed and identified from the community as part of the Comprehensive Plan public outreach initiatives. With that information, certain technology packages and WRF features that can facilitate greater public acceptance will be discussed and accounted for in the facility plan.

In concert with the Discharge Modeling effort, Garver will, in collaboration with the City’s input, develop a preliminary listing of potential sites for the proposed WRF. Based upon these potential sites, a preliminary identification of “Good Neighbor” features shall be developed for each of two (2) shortlisted sites. The NIMBY discussion, in addition to other considerations listed above in Section 5.1, will be utilized to recommend a single preferred site. These NIMBY features are anticipated to include the following:

- Facility setback from adjacent property lines.
- Site drainage and stormwater runoff control and treatment.
- Landscaping architectural features, including barrier berms, fencing, site grading, and landscaping
- Architectural features, building features and enclosure configuration.
- Area illumination features throughout the proposed site.
- Odor enclosure and capture features together with odor treatment facilities.
- Special community and adjacent property City considerations.

## **Treatment Evaluation Technical Memorandum and Workshop**

A draft Treatment and Reuse Evaluation TM will be delivered to the City. This TM will summarize the findings of Task 5. Following City review, Garver will conduct a review workshop with City staff, document key decisions and feedback, and issue a final Treatment and Reuse Evaluation TM based upon those comments. The final Treatment and Reuse TM will be included as an Appendix to the WWMP and utilized for key planning criteria in subsequent tasks. Garver will submit three (3) bound copies of both the draft and final TMs.

## **TASK 6 - CAPITAL IMPROVEMENT PROGRAM OUTLAY AND COST OF SERVICE UPDATE**

Utilizing the findings of previous tasks, Garver will develop a Capital Improvement Plan (CIP) through a 20-year planning horizon. This plan will identify the timing and triggers for key wastewater system capital improvements projects for the planning horizon.

## **TASK 7 - WASTEWATER MASTER PLAN REPORT**

Garver will document the findings of the previous tasks and incorporate City review comments into a final report. Following City review, Garver will conduct a review workshop with City staff, document key decisions and feedback, and issue a final WWMP Report based upon those comments. Garver will submit three (3) bound copies of both the draft and final WWMP. The WWMP Report will include the following sections:

- Executive Summary
- Baseline Development
- Collection System Modeling and Evaluation
- Discharge Modeling
- Treatment and Reuse Evaluation
- Capital Improvement Program Outlay
- Cost of Service Update

## **TASK 8 - PROJECT DELIVERABLES**

The following will be submitted to the City, or others as indicated, by Garver:

- Three (3) hard copies of the draft and final Baseline Development TM
- Three (3) hard copies of the draft and final Collection System Modeling and Evaluation TM
- Three (3) hard copies of the draft and final Discharge Modeling TM
- Three (3) hard copies of the draft and final Treatment and Reuse Evaluation TM
- Three (3) hard copies of the draft and final Wastewater Master Plan Report
- Powerpoint slides of each workshop (pdf and ppt format)
- Powerpoint slides and exhibits for public outreach events
- Electronic files (pdf, Word, Excel, and PowerPoint) for all documents
- Updated Model files in electronic format
- GIS Electronic files of proposed capital improvements, deficient infrastructure, dry and wet weather model results, and other information requested by the City related to model results

## ADDITIONAL SERVICES

Additional services are services that may be necessary for completion of the project (or deemed as necessary and authorized by the City) but are not included within this Scope of Services. These services can be added by amendment for an additional fee as agreed to by the City and Garver.

### Conceptual SCADA Evaluation

Garver may also provide a conceptual evaluation of the current collection system Supervisory Control and Data Acquisition (SCADA) system, including lift station control systems, network and telemetry infrastructure, and SCADA Human-Machine Interface (HMI) platforms throughout the system as part of additional services. Garver will develop up to two (2) alternatives for system-wide SCADA system telemetry and SCADA HMI platforms to meet the future planned growth. Garver will also provide recommendations for improving the SCADA HMI user interface to improve data collection, control, and reporting. Existing system data, as well as City GIS and desktop topographical information will be utilized to identify potential limitations in line-of-sight (LOS) or other telemetry challenges.

### Discharge Modeling

Garver may also provide desktop modeling exercises to assess the impact of a new North WRF on water quality in the Little River, based on discharge locations for the two North WRF alternatives evaluated in Task 3.

Following stakeholder and regulatory coordination, Garver will compile and analyze the data obtained. Garver will estimate the impacts of the two (2) potential discharges from the North WRF on the Little River using uncalibrated desktop water quality models with inputs from the literature, historical data, and recent water quality modeling conducted in the local area by others, if available. No water quality sampling or calibration is included in this task, so Garver will include sensitivity analyses to assess how uncertainty in model inputs can affect the predicted water quality impacts. Garver will present the preliminary modeling approach to Owner in one (1) progress meeting.

## EXTRA WORK

The following items are not included under this agreement but will be considered as extra work:

- Rework for the City's convenience or due to changed conditions after previous alternate direction and/or approval.
- Submittals or deliverables in addition to those listed herein.
- Design, geotechnical, or survey services of any kind
- Bidding or construction phase services of any kind
- Action Plans or design services for proposed projects
- On-site meetings with ODEQ, OWRB, or other regulatory agencies, other than those listed herein
- Water rights, wastewater discharge, construction, or any other permitting
- Evaluation of plan alternatives in addition to those listed herein
- Financial assistance
- Pilot testing
- Environmental services and documentation, including wetlands identification or mitigation plans or other work related to environmentally or historically (culturally) significant items
- Conceptual evaluation of the current collection system Supervisory Control and Data Acquisition (SCADA) system, including lift station control systems, network and telemetry infrastructure, and SCADA Human-Machine Interface (HMI) platforms throughout the system.
- Discharge modeling and regulatory coordination associated with discharge limits

Extra Work will be as directed by the City in writing for an addition fee as agreed upon by the City, RDG, and Garver.