

CONFIDENTIAL

ModPIMS Amendment #01 Program Assurance Code Review

Prepared for San Bernardino County Assessor
June 16, 2022
Engagement Number: 330076689

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Table of Contents

Section 1 Executive Summary



Section 2 Engagement Overview



Section 3 Statement of Work



Section 4 Fees



Section 5 Appendix





Executive Summary



Gartner is uniquely qualified and the County's best choice for a ModPIMS Program Assurance partner

Gartner is the only firm with the program oversight depth, insight, and practical experience to partner with the County and support the successful delivery of ModPIMS.

1 Knowledge of San Bernardino County and ModPIMS

- Gained in-depth knowledge of the County since engaging in 2019.
- Conducted an in-depth interviews and workshops to establish a current state
- Collaborated with multiple Assessor Departments to develop requirements and RFP.
- Supported initial procurement for the County.
- Extensive workshops, meetings, and iterative sessions drafting enhancement Use Cases.

2 Experience guiding jurisdictions through modernization

- Battle tested program oversight skills honed in comparable large, complex jurisdictions (e.g., New York City, San Francisco, San Antonio, Clark County).
- Strategic and collaborative approach to problem solving and delivering actionable guidance across various stakeholder groups.
- Proven tools, templates and techniques for proactive risk identification and mitigation; and high quality vendor deliverables.

3 Depth and expertise in assessor systems and global technology trends

- A team of 30+ practitioners working with assessor clients across North America.
- A network of peer jurisdictions and vendor representatives to leverage throughout the ModPIMS journey.
- World-leading research and advisory firm with 15,000+ associates in 100+ offices around the world.



Amendment 01 - Gartner Approach & Deliverables

Background

- The primary vendor associated with the San Bernardino Assessor's ModPIMS initiative has elected to end their contract without completing all tasks and milestones
- The ModPIMS initiative will require additional work to be completed in order to successfully complete the effort
- Gartner proposes to support the Assessor's ModPIMS initiative beyond the existing vendor termination, and prepare to successfully represent the current work to potential partners/vendors that may continue the ModPIMS initiative

Amended Approach

- Gartner will complete the May Program Assurance report.
- Gartner will Conduct a Code Analysis of the work that has been delivered to date.
- The Gartner contract end date will be adjusted to August 31, 2022

Amended Deliverables

- (Added in this Amendment) Gartner will perform a quantitative review of the application code delivered by the exiting vendor—Gartner will use its proprietary App Analyzer application architecture quality review suite of tools to analyze application artifacts
- Initial Findings & Refined Findings
- Final Report and Recommendations



Engagement Overview

Amended



Amended – Gartner Engagement Objectives and Scope

Our Understanding of the Current Situation

- San Bernardino County embarked upon a code conversion of its legacy Assessor system using the services of a vendor, primarily through automated code transformation.
- COBOL was converted to C#, VB6 to C# with different controls, and JCL to Python. The database was refactored from DB2 to SQL. The target state incorporates Microsoft Azure Logic Apps.
- The vendor reports that the transformation is very close to completion. However, code is not in production.
- A situation has arisen with the vendor's performance that led to the contract being terminated, necessitating the need for an independent assessment of the state of the transformed code base.
- The County asked Gartner to assess the work products that have been created to date, to better equip the County to consider next steps for the modernization effort.

Gartner Response

- Gartner is uniquely qualified to assist San Bernardino County in this effort. We are familiar with the County context and have conducted similar assessments for similar clients.
- Gartner will use a combination of proven approaches and due diligence expertise to assess the quality and completeness of the legacy transformation work delivered by the County's vendor by assessing transformation process best practices, code quality, test quality and coverage.
 - Note: Legacy transformation completeness will be assessed based on the amount of code analyzed compared to what is believed to encompass the entire solution. For example, even if all the C# code is reviewed, there could be additional executable code discovered that is referenced (e.g., procedural SQL, code for rules engine, etc.)
- Gartner will perform a quantitative review of the application using App Analyzer, Gartner's application architecture quality review suite of tools to analyze application artifacts such as code, application server logs, defect logs etc.
- This assessment will provide evidence-based findings that will be converted into a business level understanding of the transformed application's maintainability, extensibility, robustness, scalability.
- Gartner will leverage these findings to provide targeted recommendations aimed at improving the application architecture and implementation.

Gartner's AppAnalyzer tool provides evidence-based results from an Application Architecture Quality Assessment

Gartner will perform a quantitative review of the application using the Gartner application code review suite of tools - AppAnalyzer

What is AppAnalyzer?



- Evidence-based analysis from static artefacts (source code, databases, embedded structures) or logs (web server/application exception logs, defect logs, test logs) to provide insights in **maintainability, robustness, extensibility and scalability**
- **Visualization** to detect and illustrate patterns
- **Note:** The analysis tools are Gartner-developed python scripts that form an extensive library that looks at elements such as code, architecture, data, and logging. These scripts seek to answer questions around maintainability, robustness, extensibility, and scalability.

Objectives



- Provide **Application Architecture Quality** assessment and deliver executive-level, business outcome-oriented interpretation of technical findings to help clients make "Executive Decisions" on next steps
- These assessments determine the probability of the architecture and design to meet target business and technical requirements based on the assessment of software quality attributes

Benefits



- Determine the delivery quality of work products created by the transformation vendor
- Assess the sustainability of the resulting system going forward
- Identify potential dependencies on 3rd party components within the architecture (some transformation vendors require proprietary runtime libraries)
- Equips the County to go to market to procure services to complete the transformation effort
- Empowers the County with a stronger position to manage the next vendor to complete the transformation
- Informs ongoing oversight



Statement of Work

Tasks added by this Amendment #01



Gartner's Application Code Analysis Engagement Approach

1 Project Initiation

Activities

- Conduct planning meetings
- Confirm project schedule
- Establish communication plan
- Collect background documentation
- Conduct Project Kickoff
- Confirm logistics for access to software artifacts

Deliverables

- Kickoff Meeting & Materials

2 Data Collection

Activities

- Review background documentation
- Conduct interview with the code transformation vendor (if possible)
- Conduct interviews with key stakeholders
- Analyze software artifacts such as code, defect logs, application server logs, data schema etc. using AppAnalyzer
- Provide update(s) to San Bernardino County's project team on progress and initial findings

Deliverables

- Initial Findings & Refined Findings

3 Develop Final Report

Activities

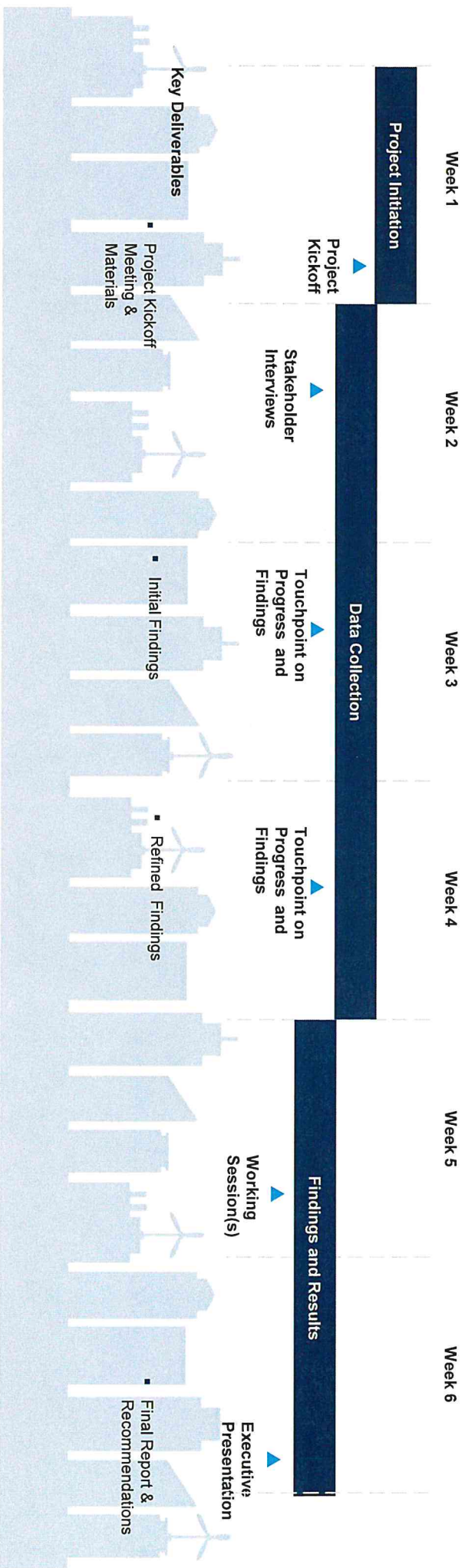
- Develop draft recommendations to address high priority findings
- Conduct working session with solution architects to review, refine and sequence recommendations
- Review recommendations with key stakeholders
- Finalize report, including Executive Summary
- Present Executive Summary that summarizes engagement deliverables and findings / recommendations

Deliverables

- Final Report and Recommendations

Project Plan Overview

Gartner anticipates completion of this engagement within 6 weeks, as detailed in the following figure. This schedule is dependent on the assumptions included in this Proposal.



Task 1 — Project Initiation

Objective

- Provide a consensus level understanding to project stakeholders regarding project objectives, approach, schedule and responsibilities

Activities Performed by Gartner

- Conduct planning meetings (confirm project schedule, establish communication plan, initial interviews)
- Collect background documentation
- Conduct Project Kickoff
- Confirm logistics for access to software artifacts:
 - Source Code
 - Database Scripts
 - App and Middleware log files
 - Other machine-readable data

Deliverable(s)

- Engagement kickoff presentation that includes:
 - Project overview and objectives
 - Approach and methodology
 - Schedule and tasks
 - Example work products

Time Frame

- 1 Week

County's Responsibilities

- Ensure personnel available to participate
- Schedule interviews with solution architects, developers, and key stakeholders (see next slide for details)
- Provide access to software artifacts for in scope software components

Task 2 — Data Collection

Objective

- Collect all relevant project information and conduct an objective analysis of software artifacts to identify app. architecture and implementation findings that impact scalability, extensibility, robustness, and maintainability

Activities Performed by Gartner

- Review background documentation to provide context (e.g., architecture diagrams, architecture decisions, and design patterns)
- Conduct interviews with key stakeholders
 - 1.5 hours with the architect or designee (a knowledgeable resource to support a walk through of the high-level app design—preferably the responsible architect from the vendor organization)
 - 1.5 hours with 1-2 core developers to understand the front-end and back-end patterns
- Analyze software artifacts using AppAnalyzer (see next slide for scope)
- Provide update(s) to County project team on progress and initial findings (1 midpoint check-in – 1.5 hours)

Deliverable(s)

- Initial Findings and Refined Findings

Time Frame

- 3 Weeks

County's Responsibilities

- Make personnel, current documentation and software artifacts are available on a timely basis to facilitate aggressive evidence gathering and analysis by Gartner team
 - Note: The County will make two former CGI employees available for interviews and may be able to organize calls with the code transformation company (TSRI) and content management company (STG).
- Provide requested artifacts via electronic media or file transfer

Task 2 — Data Collection (Continued)

Scope of Analysis

- **Scope of Analysis**
 - **Static analysis:**
 - Front-end code: C# and UI controls
 - Services tier: C#
 - Platform tier: Azure Logic Apps configuration
 - Batch tier: Python
 - Data tier: SQL Server data model, stored procs (if any)
 - **Dynamic analysis:**
 - App server log files to look for exception patterns, usage patterns based on test runs
 - App server error logs
- **Areas of Focus**
 - Code dependencies
 - Code complexity
 - Clusters of functionality
 - Interactions patterns between the front-end and back-end
 - Transaction handling and state management
 - Overall code quality
 - Dependence on 3rd party libraries
 - **Solution Software within Scope**
 - modPIMS “like-for-like” code
 - Newly developed code (e.g., CAMA, Transfer Workflow, Web Services Framework, etc.)

Task 3 — Develop Final Report

Objective

- Develop targeted recommendations to help improve maintainability, extensibility, robustness, and scalability
- Summarize engagement artifacts into a business level presentation which clearly describes key findings and prioritized recommendations

Activities Performed by Gartner

- Develop draft recommendations to address high priority findings
- Conduct working session with solution architects to review, refine and sequence recommendations (one 1.5 hour session)
- Review initial recommendations with key stakeholders

Activities Performed by Gartner *(continued from left)*

- Finalize report, including Executive Summary (~7 key slides, with additional detail for visualizations)
- Present Executive Summary that summarizes engagement deliverables and findings / recommendations (one 1.5 hour session)

Deliverable(s)

- Final Report & Recommendations

Time Frame

- 2 Weeks

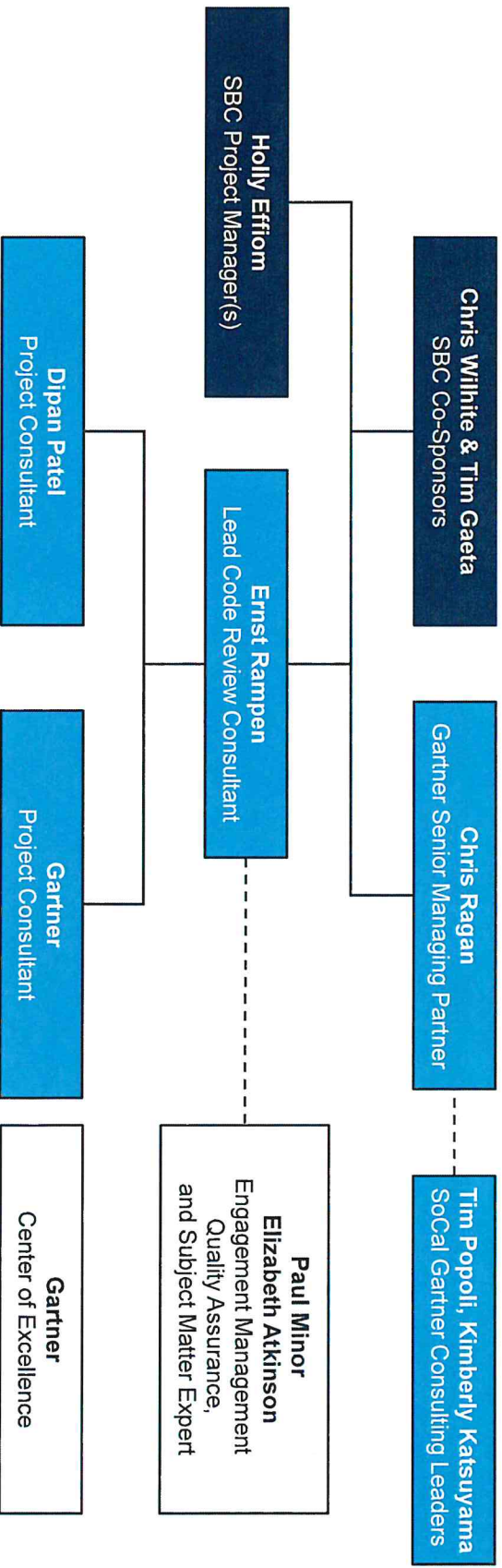
County's Responsibilities

- Participate in and schedule meetings

Project Team Overview

Organization Chart

Gartner has created an organization structure for this engagement that ensures high-level sponsorship and quality assurance, strong day-to-day project management, a focused team of project consultants, and deep subject matter expertise. Gartner does not commit named associates at Proposal stage, however resources will be confirmed upon acceptance of this proposal by the County.



Project Team Overview

Gartner Roles and Responsibilities

Functional Role	Responsibilities
Senior Managing Partner Chris Ragan	<ul style="list-style-type: none">▪ Ensure that Gartner activities support San Bernardino Assessor goals.▪ Build and maintain a long-standing relationship with San Bernardino Assessor.▪ Provide high-level oversight to the engagement and become more heavily involved should any issue resolution be necessary.
Lead Code Review Delivery Consultant Ernst Rampen	<ul style="list-style-type: none">▪ Be responsible for the day-to-day management of engagement initiatives.▪ Ensure that deliverables are completed on time and meet the Gartner quality standards.▪ Act as the primary point of contact for the Gartner team.▪ Work closely with San Bernardino Assessor to ensure that Gartner is meeting its needs.
Engagement Manager and Quality Assurance Paul Minor Elizabeth Atkinson	<ul style="list-style-type: none">▪ Provide quality assurance review of Gartner project plan and Gartner deliverables throughout the engagement.▪ Ensure that deliverables are completed on time and meet the Gartner quality standards.▪ Provide IV&V subject matter expertise and guidance to the delivery team
Project Consultant(s) Dipan Patel	<ul style="list-style-type: none">▪ Provide day-to-day consulting support for project steps.▪ Provide support for data collection, data analysis and recommendations for activities.▪ Participate in deliverable creation, deliverable review and client presentations as needed.▪ Present results to San Bernardino Assessor as needed.
Subject Matter Expert	<ul style="list-style-type: none">▪ Support the core project team by providing a context-sensitive perspective to issues specific to San Bernardino Assessor based on Gartner industry-leading research.▪ Participate in analysis and comparisons, and review deliverables as needed.
Center of Excellence	<ul style="list-style-type: none">▪ Quickly deploy to the project to provide expertise in the required area (i.e. data conversion, requirements analysis, business process reengineering, scripting and custom development, testing, etc.)

Project Management and Control

A number of crucial activities are accomplished via Gartner's project management process, namely:



- Our project management process guides reporting, risk mitigation and engagement control throughout:
 - Gartner will conduct periodic status meetings with the San Bernardino Assessor and provide status reports that capture the status of completed and upcoming project activities
 - Gartner will be in constant communication with stakeholders to ensure full awareness of activities, the associated timeline and actions required to ensure efficient control of project change.
 - Communication between Gartner, the County, and CGI is a key risk to the project. Gartner's approach to communication is highlighted on the following slide.

Assumptions

San Bernardino County Participation

The deliverables, schedule and pricing in this SOW are based on the following assumptions:

- San Bernardino County Assessor will designate a project manager to act as the primary point of contact for this engagement. San Bernardino County Assessor's project manager will be expected to work closely with the Gartner employees as needed and will: (a) approve priorities, detailed step plans and schedules; (b) facilitate the scheduling of Gartner interviews with appropriate client personnel; (c) notify Gartner in writing of any engagement or performance issues; and (d) assist in resolving issues that may arise.
- The work effort described in this SOW assumes San Bernardino County Assessor's personnel are available to assist in the manner defined in this SOW. In the event that San Bernardino County Assessor's personnel are not available, a change of scope may be necessary.
- San Bernardino County Assessor will review and approve documents within five business days. If no formal approval or rejection is received within that time, the deliverable is considered to be accepted by San Bernardino County Assessor.
- San Bernardino County Assessor will schedule San Bernardino County Assessor's resources for engagement activities and provide meeting facilities as necessary.
- San Bernardino County Assessor's personnel will be available per the final project schedule.
- The engagement will be informed through information in status reports, key project meetings, and deliverables produced by the implementation vendor
- County will review all Gartner work products (deliverable reviews, risk reports, code analysis reports, etc.) prior to any information being shared with any other partners or prospective vendors. The County is responsible for conveying requests for change in documentation or in process to the implementation vendor directly, unless mutually agreed to by the County and Gartner.

Assumptions

Data Collection, Key Personnel, and Place of Performance

Data Collection

- The due diligence (as-is) data are reasonably available via interviews and documentation review.
- San Bernardino County Assessor will provide timely access to all appropriate personnel to be interviewed. These personnel will provide the data necessary to complete this engagement, answer questions, provide existing documentation and attend working sessions.
- All data collection and interviews/workshops will take place via telephone, via online meetings, or in person at location as described in this SOW and/or as agreed to at the project Kickoff.
- The County will provide document-based deliverables for QA review as they are completed by the implementation vendor as soon as they are submitted to the County.

Key Personnel

- Resumes/biographies of key personnel provided in this SOW are included solely for illustrative purposes and do not indicate the commitment of a specific named associate. Upon signing of a contract, we will identify those associates with the appropriate skills and background to deliver fully on the undertakings defined in the SOW.
- In the event that unforeseen circumstances require the replacement of an associate on an engagement, Gartner will inform San Bernardino County Assessor as soon as reasonably possible and substitute appropriate associates with comparable skills.

Place of Performance

- Except for meetings and workshops, all Gartner services will be performed at Gartner locations.
- Office space, telephones, printing/copying services and access to the open internet will be made available on a reasonable basis to Gartner at San Bernardino County Assessor's locations for onsite time.

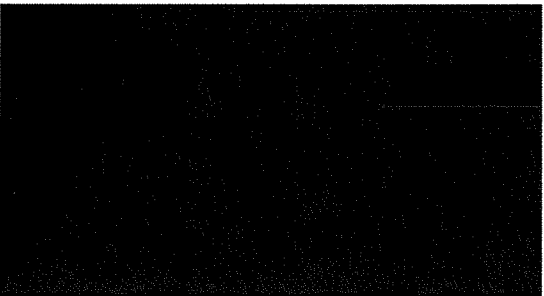
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Assumptions

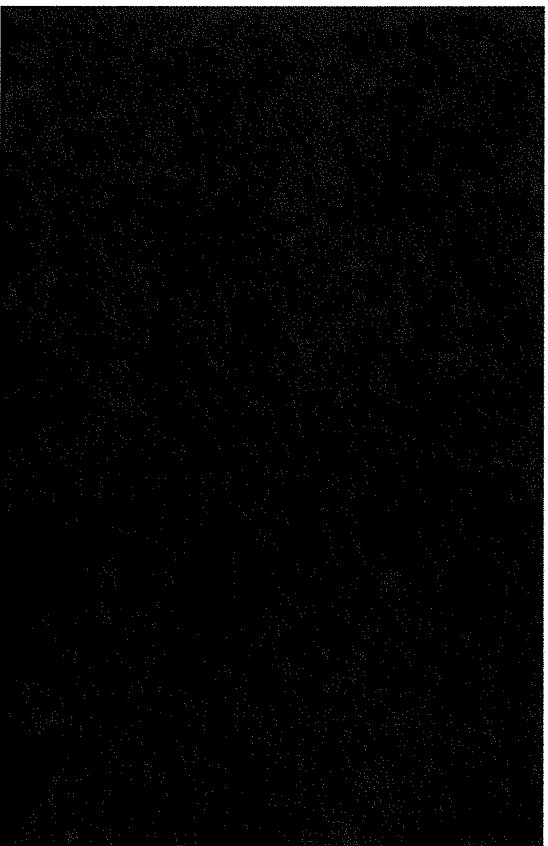
Deliverables and Changes to Scope

Deliverables and Changes to Scope

- Any requests for additional information or resource (beyond the details described in the steps above) that are made by San Bernardino County Assessor will be considered a change in scope for this engagement and will be handled accordingly (see Changes to Scope section of this SOW).
- All deliverables will be developed using Microsoft products (e.g., Word and PowerPoint).
- Gartner will provide its services over the time period outlined, and assumes a consistent level of support as detailed in this SOW. If the level of support is higher than expected given changes to the vendor project schedule or other factors, Gartner will manage this change through a change order.



Fees



Amended – Fees and Expenses

- This Amendment encapsulates an agreed upon Change of Scope from the originally contracted SOW.
- The Original contract was comprised of two (2) distinct service products, each with a customized focus and level of Program Assurance Support.
 - Service Product 1 has been fully delivered, invoiced, and paid
 - Service Product 2 remains intact under this Amendment
- **Service Product 3 is added under this Amendment** – an independent Code Analysis Review of the code delivered “to-date” by the exiting vendor. This will be billed as defined on the invoice schedule (to be found later in this document).
- Gartner will conduct the engagement outlined in this SOW for an amended firm-fixed price of \$723,190.00 (plus any taxes, if applicable) inclusive of travel and other reimbursable expenses.

Service Product	Level of Program Assurance Support	Deliverable	Cost	Ventura County Contract #4667 category
1	High - Baseline Assessment Focus	Baseline Assessment/Risk Reports (3 reports)	\$184,770.00	Smart Government Readiness Assessment – High Complexity
2	Medium – Ongoing SDLC Focus	Ongoing Monthly Risk Reports (9 reports)	\$265,230.00	Smart Government Readiness Assessment – High Complexity

Added by	Amendment	3	Enhanced – Code Analysis Review	Code Analysis Review Reports (initial and final findings and recommendations)	\$273,190.00	Smart Government Readiness Assessment – High Complexity
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Total ~~\$450,000.00~~ Amended to **\$723,190.00**



Fees and Expenses: Invoice Schedule

- Gartner will Invoice monthly as defined in the schedule below:

Invoice	Level of Program Assurance Support	Deliverable	Amount	
1	High – Baseline Assessment Focus	Baseline Assessment/Risk Report 1	\$61,590.00	Complete
2	High – Baseline Assessment Focus	Baseline Assessment/Risk Report 2	\$61,590.00	Complete
3	High – Baseline Assessment Focus	Baseline Assessment/Risk Report 3	\$61,590.00	Complete
4	Medium – Ongoing SDLC Focus	Ongoing Monthly Risk Report	\$29,470.00	Complete
5	Medium – Ongoing SDLC Focus	Ongoing Monthly Risk Report	\$29,470.00	Complete
6	Medium – Ongoing SDLC Focus	Ongoing Monthly Risk Report	\$29,470.00	Complete
7	Medium – Ongoing SDLC Focus	Ongoing Monthly Risk Report	\$29,470.00	Complete
8	Medium – Ongoing SDLC Focus	Ongoing Monthly Risk Report	\$29,470.00	Complete
9	Medium – Ongoing SDLC Focus	Ongoing Monthly Risk Report	\$29,470.00	Complete
10 (May 2022 Report)	Medium – Ongoing SDLC Focus	Ongoing Monthly Risk Report	\$29,470.00	
11	Medium – Ongoing SDLC Focus	Ongoing Monthly Risk Report	\$29,470.00	
12	Medium – Ongoing SDLC Focus	Ongoing Monthly Risk Report	\$29,470.00	
11	Enhanced – Code Analysis Review	Initial Findings	\$140,000.00	
12	Enhanced – Code Analysis Review	Final Report and Recommendations	\$133,190.00	

Added by Amendment →

Added by Amendment →

12
(to be delivered on or
before 08/31/2022)

Investment Summary: Billing and Invoicing

Billing

- Gartner will conduct the steps as outlined in this SOW for the firm-fixed price defined on the previous slide.
- Gartner will bill for the professional fees at the conclusion of each milestone upon San Bernardino County Assessor's acceptance of the deliverable(s) for that milestone. Note, if no response is received within 5 days, then acceptance of the deliverable is assumed.

Invoicing

- All invoices are payable net 30 days from the date of invoice. While we do not itemize billing for services, we agree and will comply with any reasonable requests for records substantiating our invoices.

Changes to Scope

- The scope of this engagement is defined by this SOW. All San Bernardino County Assessor's requests for changes to the SOW must be in writing and must set forth with specificity the requested changes. As soon as practicable, Gartner shall advise San Bernardino County Assessor of the cost and schedule implications of the requested changes and any other necessary details to allow both parties to make an informed decision as to whether they will proceed with the requested changes. The parties shall agree in writing upon any requested changes prior to Gartner commencing work.
- As used herein, "changes" are defined as work activities or work products not originally planned for or specifically defined by this SOW. By way of example and not limitation, changes may include the following:
 - Any activities not specifically set forth in this SOW
 - Providing or developing any deliverables not specifically set forth in this SOW
 - Any change in the respective responsibilities of Gartner and San Bernardino County Assessor, including any reallocation or any changes in engagement or project manager staffing
 - Any rework of completed activities or accepted deliverables
 - Any investigative work to determine the cost or other impact of changes requested by San Bernardino County Assessor
 - Any additional work caused by a change in the assumptions set forth in this SOW
 - Any delays in deliverable caused by modification of acceptance criteria in this SOW
 - Any changes to Research Analysts' time or resources

Authorization

- This Proposal is submitted subject to and in accordance with the agreement for technology advisor services between Ventura County California and Gartner, Inc. – contract number 4667.
- When signed by Gartner, Inc. and the County of San Bernardino, this Proposal/SOW is an attachment to and governed by the agreement for technology advisor services between Ventura County California and Gartner, Inc. These two documents will set forth the relationship between the parties for this engagement.
- This SOW may be modified at any time provided such changes (i) are agreed by the parties in writing and (ii) where applicable, are in accordance with the Change Order provision.
- The Proposal, including the SOW, is valid for 30 days from 16 June 2022.

SUBMITTED ON BEHALF OF GARTNER, INC.



SIGNATURE
Chris Ragan, Senior Managing Partner
Name and Title
16 June 2022
DATE

AGREED ON BEHALF OF SAN BERNARDINO COUNTY ASSESSOR



SIGNATURE
Dawn M. Rowe, Vice Chair, Board of Supervisors
PRINT NAME AND TITLE
16/28/22
DATE
N/A
PO NUMBER (if applicable)



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