**EAST BAY
MUNICIPAL UTILITY DISTRICT**

Computerized Maintenance Management System (CMMS)

**Request for Proposal
Questions & Responses**

November 13, 2020

1.0 Questions and Responses

1. Are the end users represented on the selection committee?
   Answer: Yes.

2. Who else is on the selection committee?
   Answer: EBMUD staff representing the user community.

3. Did a third party help prepare this RFP? Are they on the selection committee? Are they advising the selection committee? What type of entity are they?
   Answer: This RFP was prepared by EBMUD, no third party was involved in its creation.

4. Did you have demos of solutions that meet your requirements before? What did you like and dislike about them?
   Answer: We did not have any demos of solutions before.

5. What product demonstration has the District seen in the last 12 months?
   Answer: None.

6. Why are you trying to get a new system?
   Answer: Please refer to Section IA - SCOPE, in the CMMS Project RFP document**.**

7. What problem are you trying to solve with this RFP?
   Answer: Please refer to Section IA - SCOPE, in the CMMS Project RFP document**.**

8. Is there an approved budget? Over what period? If so, what amount is it? What are the sources: federal funds, state funds, agency appropriated, etc.?
   Answer: The District has allocated a budget for this project.

9. Can you share what the Districts allocated budget for this CMMS Project?
   Answer: The District has allocated a budget for this project.

10. Is there an approved Budget for the Project? Can you provide a price range?
    Answer: The District has allocated a budget for this project.

11. What are the risks that you are concerned about going through this RFP? For example, is the delay in adoption by employees a risk you are concerned about?
    Answer: We anticipate risks that are common to project of this size and scope.

12. Given the current affairs, Covid19 is causing delay in response time to RFPs' and to save the trees, we request to make the demo to be remote and we request extending the deadline for 15 days.
    Answer: EMBUD has extended the deadline for 2 weeks; the RFP responses are now due on December 18th by 4 pm Pacific time. The demos will be held remotely considering the pandemic.

13. Can you list the RFPs of this size you awarded in the last 6 years by the nature of the RFP, size, who was awarded and why you chose them?
    Answer: We are currently implementing the Oracle Financial and Procurement system.

14. Are we required to work with EBMUD partners?
    Answer: All coordination with vendors not included in the RFP will be coordinated through EBMUD staff.

15. Is there a vendor meeting that EBMUD will schedule?
    Answer: We do not anticipate having a vendor meeting.

16. Has a date/time been set for a pre-proposal conference?
    Answer: We do not anticipate having a pre-proposal conference.

17. Will there be a pre-bid conference?
    Answer: We do not anticipate having a pre-bid conference.

18. RFP page 6 mentions that a pre-bid conference might be held, but no details follow. Will there be a pre-bid meeting for this RFP?
    Answer: We do not anticipate having a pre-bid conference.

19. Do vendors have to register for the RFP and state they are bidding?
    Answer: Vendors do not have to register in order to submit a bid.

20. Is this an open bid?
    Answer: Yes

21. Are vendors allowed to use the vendor professional services?
    Answer: Yes

22. Can the vendor include offshore resources in the proposal?
    Answer: The District prefers onshore, on-site consulting service delivery but proposers may include the resources required to maximize project success.

23. Would EBMUD be able to provide documents (other than the two Excel documents) in an editable format for easier extraction of and response to the questions and requirements?
    Answer: Yes, we can post the editable versions of the RFP documents on our RFP page at the below location:
    https://www.ebmud.com/business-center/requests-proposal-rfps/computerized-maintenance-management-system-cmms/

    The editable versions are the exact same versions as the PDFs. These can be used to provide responses but the original content should not be altered.

24. If EBMUD would like vendors to input their answers directly into Attachments B and C using the documents EBMUD provided, can EBMUD please provide these documents in Word format?

Answer: Please see answer to Q.23 above.

25. Exhibit A, Page 1 has a note specifying that Attachment A1 is available as a Word document. However, only a .pdf is posted on the Website. Is a Word version available for vendors to complete?
    Answer: Please see answer to Q.23 above.

26. Can the District provide Attachment C - Preliminary Security Information Gathering (PSIG) document in Word format?
    Answer: Please see answer to Q.23 above.

27. Can we get a list of vendors additionally proposing on this RFP?
    Answer: Until the proposal deadline passes we don't know who submitted proposals. The list of proposers will not be made available to other proposers.

28. Can we get a copy of the IT Strategic Plan?
    Answer: IT Strategic Plan is intended for EBMUD staff only.

29. Questions around Warranty – 5 years:
    A) Does the Warranty apply to just the software or include the entire deployed system?
    B) In our experience the only way to warrant a deployed system is against the agreed upon specifications – and that as soon as those are changed the warranty is off. That does not seem possible for 5 years, therefore can EBMUD provide your definition of how the deployed system is expected to be warranted?
    Answer: Our discussion around Warranty would be addressed as part of Contract negotiations.

30. Will having a SBE or DVBE as a subconsultant meet the requirements for proposal preference?
    Answer: The SBE / DVBE preference applies to the Proposer as stated in Exhibit A, Page 4.

31. Page 21 of the RFP (Exhibit A, Page 6), under Description of the Proposed Services # 4 states: "The description shall identify spare or replacement parts that will be required in performing maintenance services, the anticipated location(s) of the spare parts, and how quickly the parts shall be available for repairs." What is this in reference to? Is this a part of desired services, if so, for what?
    Answer: No spare or replacement parts are required for this RFP.

32. Exhibit A, page 6 has a requirement stating: "The description shall identify spare or replacement parts that will be required in performing maintenance services, the anticipated location(s) of the spare parts, and how quickly the parts shall be available for repairs." If a vendor is proposing a SaaS solution, is it acceptable to provide a not applicable response?
    Answer: No spare or replacement parts are required for this RFP.

33. Can #6 on page 22 (Exhibit A Page 7) be clarified? How can this be accomplished in our RFP response prior to implementation? Particularly in light of having to build out integrations during the project proper?

Answer: EBMUD does not require evidence of qualification testing for this RFP. Proposed solutions must meet the other requirements stated in the RFP. All software, whether hosted on-premise or in the cloud, must be capable of running on commodity hardware and infrastructure.

34. Is a Bond required?
    Answer: No.

35. For submission, please confirm that you would like answers to the questions in Exhibit A submitted only within the Exhibit A document EBMUD provided.
    Answer: Exhibit A has guidelines for the RFP response packet as well as forms to provide references and list exceptions, clarifications and amendments.

36. Could you please clarify whether our understanding that the below attachments will <u>ALL</u> be required along with our main proposal/response document?
    a) Attachment A1 (list any deviations from stated requirements)
    b) Attachment A2 (list any deviations from stated requirements)
    c) Attachment A3
    d) Attachment B (list any deviations from stated requirements)
    e) Attachment C
    f) Attachment D
    g) Exceptions, Clarifications, Amendments
    h) Contract Equity Program
    Answer: Yes, all attachments are required.

37. For A1 and A2, the instructions in Exhibit A say: " PLEASE INDICATE WHETHER THE REQUIREMENT SPECIFIED IS INCLUDED IN THE OUT-OF-THE-BOX (BASE) PRODUCT, INCLUDED   AS EXISTING FUNCTIONALITY. IF SO, PROVIDE THE MODULE NAME." Later in Exhibit A, the instructions for these attachments say: "To be read in its   entirety. Any deviation from the stated requirements is to be documented and submitted." Please clarify what information you are seeking from vendors with regard to Attachments A1 and A2. Also, if these are meant to be edited by vendors, please provided an editable version.
    Answer: We will post editable versions of Attachment A1 and A2 on our website. A1 and A2 list our functional and integration requirements for the CMMS solution. Vendors are expected to specify if/how their proposed solution meets the stated requirements.

38. When is the award decision date?
    Answer: Currently there is no award date decided. This will be determined after the contract negotiations with the selected vendor.

39. Will EBMUD accept a proposal that reflects a teaming relationship?
    Answer: Yes

40. What is the selection process and schedule to reach a contract, post RFP response due date?
    Answer: After RFP response evaluations, short-listed vendors will be invited to provide a demo of their solutions in Feb-March 2021.

41. Does the District have a schedule in mind to rollout all of the functionality and interfaces? If not a specific schedule, can the District provide guidance with a timeline, such as within 3 years, 5 years, or 10 years (as example)?
Answer: Implementation timelines would be based upon the selected solution.

42. Is it the District's intention to award a 10-year contract for both the software and services, or either? If not, what is the anticipated term of the contract?
Answer: The length of the agreement will be part of the contract negotiation. We request you provide cost information for up to 10 years as part of this proposal. Costs should be described as annual costs.

43. Would the 10-year firm price include both software and services?
Answer: Both software and services should be included.

44. Where or how would the software license agreement be included in the responder's proposal?
Answer: Include license agreement with the pricing information.

45. Under Description of Proposed Services: "…shall identify spare or replacement parts that will be required in performing maintenance services, the anticipated location(s) of the spare parts, and how quickly the parts shall be available for repairs" How is this applicable to the CMMS project? Please clarify how applicable.
Answer: No spare or replacement parts are required for this RFP.

46. What are the qualification test standard requirements listed in #6?
Answer: EBMUD does not require evidence of qualification testing for this RFP. Proposed solutions must meet the other requirements stated in the RFP. All software, whether hosted on-premise or in the cloud, must be capable of running on commodity hardware and infrastructure.

47. Evidence of Qualification:
    a. Are the ITA requirements in the RFP?
    b. Is it the District's expectation that the proposer identify an ITA to pay for and complete the qualification test standard requirements defined in the RFP, in advance of submitting a proposal, or at any time during the project? Can the District provide an explanation around this process, and any certified ITAs that the District has worked with in the past?
    c. This section includes reference to testing hardware. Are there hardware (i.e. field devices) expectations included in delivering the CMMS software? Is the District expecting recommendations on purchase of field devices, or inclusion of field devices in the proposal costs?
    Answer: EBMUD does not require evidence of qualification testing for this RFP. Proposed solutions must meet the other requirements stated in the RFP. All software, whether hosted on-premise or in the cloud, must be capable of running on commodity hardware and infrastructure.

48. A warranty is atypical for a CMMS software and services implementation. Please confirm if the District is open to waiving.
    Answer: Our discussion around Warranty would be addressed as part of Contract negotiations.

49. Would the District be open to extending the proposal due date? Given the complexity and thoroughness of the RFP requirements, and the timing of response to the questions, this would more readily support a full and thorough response.
    Answer: EBMUD may consider extending the deadline for 2 weeks but we have not made the decision yet. We will post any extension to the deadline on our website.

50. Will EBMUD have a vendor proposal conference?
    Answer: We do not anticipate having a vendor proposal conference.

51. In regard to the Small Business designation for the Contract Equity Program, does EBMUD accept the designation of SB-PW from the California Department of General Services? Is receipt of both of the SBE and SB-PW (Public Works) count for more points or better to meet the requirement, than either the SBE alone, or the SB-PW alone?
    Answer: EBMUD will review all aspects of the proposals and evaluate based on the overall proposed solution.

52. Does EBMUD expect the entire set of functionality listed to be delivered in one phase or multiple?   And does that correlate to the 10 year Horizon?
    Answer: Provide information on functionality that is currently available, on the roadmap and not planned. Implementation timelines would be based upon the selected solution.

53. Are there deadlines and/or does EBMUD have a timeline for the expected system deployment.
    Answer: Implementation timelines would be based upon the selected solution. Implementation is expected to begin immediately after contract approval by the Board of Directors.

54. What is the planned start date for the Project?
    Answer: Immediately upon completion of Contract negotiations and Board approval.

55. What is the expected time frame for the project?
    Answer: Implementation timelines would be based upon the selected solution.

56. Does the District have an overall schedule and/or timeline in mind for this project?
    Answer: Implementation timelines would be based upon the selected solution.

57. Does the District have a preference between a phased implementation or a 'Big Bang' Go-Live? If phased, does the District have any priorities in terms of departments?
    Answer: Proposals should include the proposers recommended strategy for implementation. Implementation timelines would be based upon the selected solution.

58. Does the District anticipate a full implementation for all departments in a single phase, or multiple phases? If multiple phases, please indicate which departments or asset groups would be up to go live first, second, third, etc.

Answer: Proposals should include the proposers recommended strategy for implementation. Implementation timelines would be based upon the selected solution.

59. What is the anticipated award date of the contract and start date of the project? Does the District have an anticipated completion date?
Answer: Contract and Implementation timelines would be based upon the selected solution. Implementation is expected to begin immediately after Board of Director approval of the contract.

60. Section 3.6 of Attachment B indicates requirements for an on-premise or a cloud based solution. However, what is the District's preference?
    a. If both options are available, would the District entertain bids that provide for both, or would two separate responses be required?
Answer: The District is looking for a solution which satisfies the requirements listed in the RFP in the most efficient and cost effective manner.

61. We are looking at proposing a Cloud solution - does EBMUD need to see an on premise offer?
Answer: The District is looking for a solution which satisfies the requirements listed in the RFP in the most efficient and cost effective manner.

62. Does EBMUD have a preference or an aversion to On-Premise or Cloud deployed solutions?
Answer: The District is looking for a solution which satisfies the requirements listed in the RFP in the most efficient and cost effective manner.

63. Does the District have a preference between on-premise, Cloud-based or a hybrid solution?
Answer: The District is looking for a solution which satisfies the requirements listed in the RFP in the most efficient and cost effective manner.

64. Please let us know whether the Work Mgmt licenses we provide will be required as On-Premise licenses or SaaS (Subscription) licenses?
Answer: Please see Attachment B: Technical Requirements Section 3.6.

65. How many FTEs and what type of resources (IT, Functional etc) does EBMUD expect to provide on the project?
Answer: Page 9 of the RFP states that Implementation Plan and Schedule will be used as part of the evaluation period. Section 3.1 of the functional requirements document states, "We will rely upon the expertise of the selected vendor and the District Information Systems Department to guide us toward the most efficient solution to satisfy what is implied by these requirements."

66. We want to verify that this is Firm Fixed Price for all Software and Services with milestone payments on services? If not please explain.
Answer: The District is looking for a solution which satisfies the requirements listed in the RFP in the most efficient and cost effective manner. The RFP contains a pricing worksheet which responders can use to specify their pricing.

67. Is an Implementation Service cost estimate to be included in the Proposal?
    Answer: Yes

68. Can you list any systems that the new Assets Management System needs to integrate with?
    Answer: Please refer to ATTACHMENT A2 - FUNCTIONAL REQUIREMENTS (INTERFACES).

69. Is there a requirement of data migration? If so, how many data sources are there? Any legacy systems? Any manual processes?
    Answer: Requirement 17.1 states: "Import information from the District's existing asset management/workflow system so that reporting on historic trends and work orders can be done in the new system." We are looking for a solution that satisfies this requirement.

70. Any requirement of a native mobile app? A native web app?
    Answer: Requirement 1.3 states: "System should allow the use of Windows, Mac, iOS, and Android devices to allow for access for employees both in the office and in the field." We are looking for a solution that satisfies this requirement.

71. What type of assets are to be managed using the system.
1. **Answer:** Section 2.3 of the functional requirement states: "Assets can be, but aren't limited to being:
    a. Horizontal/linear assets which are part of the District's water distribution systems (water mains, service laterals, valves, hydrants, etc.)
    b. Vertical/fixed assets which above ground assets requiring mechanical and electrical maintenance.
    Land such as a parcel, road, trail, etc."

    A list of some of the vertical assets which need to be managed are listed in Appendix O of the functional requirements.

72. The system you want to replace is the IBM Maximo software system?
    Answer: The District is looking for a solution which satisfies the requirements listed in the RFP in the most efficient and cost effective manner.

73. Is it the Districts intent to replace **all** existing CMMS's with a single new system?
    Answer: The District is looking for a solution which satisfies the requirements listed in the RFP in the most efficient and cost effective manner.

74. Has the District ruled out the possibility of extending the use of Maximo to serve as the single CMMS/EAM across your enterprise?
    Answer: The District is looking for a solution which satisfies the requirements listed in the RFP in the most efficient and cost effective manner.

75. EMBUD has stated the Wastewater Dept is currently using Maximo. Please indicate the District's interested in keeping Maximo and expanding your use of it.
    Answer: The District is looking for a solution which satisfies the requirements listed in the RFP in the most efficient and cost effective manner.

76. If keeping Maximo, what version is being used, how is it hosted and are there any industry solutions installed or other IBM add-ons, such as Spatial?
Answer: Below is a screen shot of the System Information

System Information

App Server   IBM WebSphere Application Server 9.0.0.6

Version
Tivoli's process automation engine 7.6.0.9 Build 20171127-0100 DB Build V7609-45
IBM Maximo Asset Management Work Centers 7.6.0.3 Build 20171121-0723 DB Build V7603-175
IBM TPAE Integration Framework 7.6.0.9 Build 20171126-2330 DB Build V7609-32
IBM Maximo Asset Management 7.6.0.9 Build 20171127-0100 DB Build V7604-01

77. How many current Maximo users does the District have?
Answer: Maximo is currently being used by our Waste Water business unit which has approximately 250 employees. We don't have a precise count of the current number of Maximo users.

78. Provide the licensing breakdown of Full-Authorized, Limited Use, Express and Self Service?
Answer: The District is looking for a solution which satisfies the requirements listed in the RFP in the most efficient and cost effective manner. See Question #82 for user count**.**

79. Please clarify if it is the District's intention to move data from other systems which are being replace, to Maximo.
Answer: Requirement 17.1 states: "Import information from the District's existing asset management/workflow system so that reporting on historic trends and work orders can be done in the new system." We are looking for a solution that satisfies this requirement.

80. Is there an org chart for the Water/WW groups that you can share
Answer: Please refer to the Organization chart at ebmud.com/about-us/board-directors/management/

81. Please list how many systems you will need – Prod, test etc
Answer: Page 9 of the RFP states that Implementation Plan and Schedule will be used as part of the evaluation period. Section 3.1 of the functional requirements document states, "We will rely upon the expertise of the selected vendor and the District Information Systems Department to guide us toward the most efficient solution to satisfy what is implied by these requirements." The District would expect several environments that best support the proposer's implementation strategy.

82. User Counts – Please provide the following counts in each column and their need for access to the system.

Answer: The following numbers are approximate and all put into the "Access" column. In the requirements we list the types of systems which need to be supported.

Role	~~Desktop~~ Access	~~Offline Mobile Access~~
2nd line Mngrs and Executives	50	
1st Line Mngrs and Supervisors	200	
Maint Field team and Crafts	1000	

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Operators	100	
Inventory	50	
IT/Admin	250	
Planner/Schedulers	50	
Finance/Accounting	100	
Engineering	250	
Other (please specify title)		
Projected High end Concurrent User Count on the system at once	This depends on the speed of the solution. I.e. the faster a solution processes requests, the fewer requests it will process concurrently.	

83. What are the user counts by Department?
    Answer: The above table represents counts by role.

84. How many users will be using Mobile solution?
    Answer: We would expect all 1st Line Managers and Supervisors and Maintenance Field team and Crafts to use a mobile solution. From the table above, this would be approximately 1200 users.

85. What are the numbers of facilities? Types?
    Answer: The types of assets are listed in the last appendix of the requirements document. Key facilities include more than 175 Reservoirs, more than 150 pumping plants, more than 25 tanks/basins, more than 5 treatment facilities, and two dams one of which produces electricity for sale.

86. What is the count of Assets?
    Answer: More than 50,000 vertical assets and a water distribution network of over 4000 miles of distribution mains.

87. The WW department uses Maximo, what version? Any industry solutions?
    Answer: See question #76 above.

88. How many work orders per year are anticipated?
    Answer: This will be dependent the rollout schedule. The District generates upwards of 50,000 work orders in a given year in its various workflow systems.

89. Could you please confirm based on the following as to what your estimations are for licenses required by the District?
    a. Number of field users
    b. Number of back-end/office administrators or staff
    c. Number of any other individuals the District believes would require access to the CMMS

Answer: The licenses will depend on whether the pricing model is based on number of licenses. We would expect more than 1,000 District employees would use the new solution.

90. **Attachment A3 – General Requirements – 1.11** – Could you kindly clarify what you refer to when you state "work groups (shops)"? This is in light of some language found in requirement **4.12**, where you state that there should be possibility of multiple shops on a single work order. We just want to be clear on the concept of shops.
    Answer: A work group is a collection of employees working on a single task. E.g. one work group might repair a main leak and a different workgroup might then later do paving work.

91. **Attachment A3 – Assets – 2.1.2** – Could you please further clarify or define the ESP 130.0 and WESP 130.0 standards you mention that the asset classes are based on?
    Answer: See Appendix A.

92. **Attachment A3 – Assets – 2.4.6** – Could you please confirm that the 'Parent' field as utilized by the District is intended for use for Asset Hierarchy?
    Answer: Yes the Parent field is intended for use for Asset Hierarchy.

93. **Attachment A3 – Planned Maintenance – 7.7** – Are there any specific conditions precedent that need to be checked, required, enforced, implemented, or otherwise for the automated WO generation? If so, please specify.
    Answer: The conditions under which a WO needs to be generated change from time to time so we would need a system that allows us to configure when automatic WO generation happens.

94. In addition to the existing WAMS-type systems described in the RFP as leveraging Oracle and Cold Fusion, are there other underlying database & development environments envisioned for WAMS migration?
    a. Are any of these existing systems (or pieces of functionality) expected to remain in production vi integration after the new WAMS is deployed?
    Answer: All underlying database and development environments are laid out in ATTACHMENT B - TECHNICAL REQUIREMENTS section 8.5.

95. Does the expected WAMS functionality include creating and dispatching Purchase Orders to vendors, and receiving in the same WAMS or integration into another procurement system?
    Answer: The expected solution would be for the CMMS to interface with the District's Purchasing system to accomplish this.

96. Does the expected WAMS functionality include managing inventory min/max, issue, receipt, cycle count, transfer and replenishment?
    a. Or, is this WAMS integration into an existing Warehouse and Procurement system expected?
    Answer: The expected solution would be for the CMMS to interface with the District's Purchasing system to accomplish this.

97. How many EBMUD staff (office & field – EBMUD & contractors) will potentially access the WAMS at one time (concurrent use)?
Answer: District staff work 24/7/365. The concurrent use will depend on the speed of the solution. I.e. the faster a solution processes requests, the fewer requests it will process concurrently.

98. Are there additional reporting metrics & KPI's other than those described in the appendices being consumed and what are these and any others' data sources and collection methods?
Answer: The District will change KPI's it monitor's over time. Section 2 of the requirements document lists the business object needed as part of a solution. The District would need the ability to generate KPI which could involve multiple business objects.

99. Is there a current or preferred method for establishing the criticality/priority ranking of the assets maintenance work across all the departments to be served by the WAMS/EAM system?
Answer: Page 9 of the RFP states that Implementation Plan and Schedule will be used as part of the evaluation period. Section 3.1 of the functional requirements document states, "We will rely upon the expertise of the selected vendor and the District Information Systems Department to guide us toward the most efficient solution to satisfy what is implied by these requirements."

100. Do unique asset registry, work history records and/or physical location data currently exist for all the assets/equipment to be managed and maintained by the WAMS/EAM system?
Answer: They do for vertical assets. For horizontal assets, they only exist for those horizontal assets for which we've generated work orders.

101. Are there existing maintenance plan task descriptions for each unique asset/equipment record for all the assets/equipment to be managed and maintained by the WAMS/EAM system?
Answer: Yes and we would want them moved to the new solution.

102. Does EBMUD use a structured system to define predictive/preventative maintenance strategies today as defined in the RFP workflow diagrams?
Answer: As it relates to strategies, page 9 of the RFP states that Implementation Plan and Schedule will be used as part of the evaluation period. Section 3.1 of the functional requirements document states, "We will rely upon the expertise of the selected vendor and the District Information Systems Department to guide us toward the most efficient solution to satisfy what is implied by these requirements."

103. What is the Total Number of Desktop Users (Executives, Managers, Supervisors, Planners, Engineers etc...). Will all Users need licenses?
Answer: We expect over 1,000 District employees to be users of the system and approximately half of these will have a desktop/laptop computer. All users of the new solution will need access to the new solution.

104. What is the Total Number of Field Technicians (Field Service Mobile Users). Will all Users need licenses?

Answer: We would expect all field staff (see table above) to use the new system. All users of the new solution will need access to the new solution.

105.   What is the Total Number of Desktop Power Users?
Answer: We expect over 1,000 District employees to be users of the system and approximately half of these will have a desktop/laptop computer. All users of the new solution will need access to the new solution.

106.   What is the Total Number of Desktop Basic Users (Query Only)
Answer: We expect over 1,000 District employees to be users of the system and approximately half of these will have a desktop/laptop computer. All users of the new solution will need access to the new solution.

107.   What is the Mobile Solution currently being used?
Answer: Field staff currently use Windows Laptops, iPhones, and iPads.

108.   Do all Depts utilize standard business Workflows (SOPs)?
Answer: All departments have standard operating procedures.

109.   What is the total Number of Assets?
Answer: See question #86.

110.   How many Inventory Items are there?
Answer: See question #86 for the number of assets we have. We need inventory items in stock to be able to implement repairs quickly.

111.   What current Analytics tools are being used?
Answer: Data is queried from the database of the respective systems.

112.   How many Crews/Shifts are there?
Answer: More than 50.

113.   Is your current CMMS highly customized?
Answer: We don't have one CMMS and are looking for one CMMS which satisfies our requirements.

114.   Are you operating on the vendors current CMMS software?
Answer: Our Waste Water business unit is using Maximo. Our Water business unit is mainly using solutions developed in house.

115.   Will Mobile be used in connected and disconnected mode?
Answer: Requirement 1.5 states, "Provide for the entry/update of information when field users are off-line because network coverage is unavailable, and then to automatically add these entries/updates into the system once network coverage has been reestablished."

116.   Although section 4.5 of Attachment B indicates that the District's user profile will likely change. Can you provide a breakdown of the number of users and roles that will be anticipated at the onset of the project?

For example:

Department	Admin	Manager/Supervisor	Technician
OMD			
WW			

Admin – Super user with create/modify credentials
Manager/Supervisor – Super user who requires access to a majority of the application to view/create/edit data and generate reports
Technician – Regular or occasional user who is viewing information and entering/modifying data to complete actions/work

Answer: See question #82 for a breakdown of roles

117.   How many of these individuals will require mobile access?
Answer: We expect all field staff to require mobile access.

118.   Does the District want to replace Maximo implementation for the Wastewater with a new system as well?
Answer: The District is looking for a solution which satisfies the requirements listed in the RFP in the most efficient and cost effective manner.

119.   What version of Maximo is currently being used?
Answer: See question #76.

120.   Will the onsite training be done at one central location or will onsite training need to be done across multiple locations/facilities? If so, how many locations will need training services?
Answer: The District has different staff located in different facilities in Alameda, Contra Costa, Amador, and Calaveras counties. We are looking for training to be as time effective as possible.

121.   Does the District have an Asset Management Plan? If so, can you share it?
Answer: It is for EBMUD staff only.

122.   Does the District currently have an Asset Management Team or Committee? If so, what is the make-up of the team by position and how often do they meet?
Answer: The District does not have a specific Asset Management Team or Committee.

123.   Does the District have contractors that are assigned work orders or service requests?
Answer: Yes.

124.	Can you please provide us with an estimated number of users for the new system (both office and mobile users)? Can a breakdown by each included department also be provided?
Answer: See question #82 for a count of employee by role. We expect over 1,000 District employees to use the solution. All field staff will need a mobile solution.

125.	Attachment A1, Section 2.3, Work Order Task Subsection, item 16. Can the District please provide your internal definition of Job Procedure (JP) and Maintenance Plan (MP).
Answer: Section 2.3 has a description of JP's and MP's. Section 7 of the functional requirement lists requirements we have for JP's and MP's.

126.	Attachment A1, Section 2.3, Program/Project Subsection, item 25. Are tasks considered activities?
Answer: Activity is a descriptor of a task. E.g. there are electrical tasks, mechanical tasks, etc.

127.	Attachment A1, Section 3.1.2 Assets: item 2.1.2. Please provide additional information about ESP 130.0 and WESP 130.0.
Answer: See Appendix A.

128.	Attachment 1, Section 3.1.3 GIS Requirements, item 3.3.1.7. Can the District provide an example of the desired outcome of this requirement?
Answer: The District is looking for a way to see where queried assets are located.

129.	How many system administrator users, supervisor users, customer service/dispatcher users, field users, and/or other (management, viewers, etc.) does the District need for the CMMS system, for water & wastewater separately?
Answer: See question #82.

130.	Can the District further explain "Work in the streets?" It sounds like a webpage to view and interact with (get info from) all or some of the work in the streets that is occurring in real-time. Is that a correct description? If not, please explain.
Answer: Yes. Work in Streets is a District developed GIS application which shows current and upcoming required street work.

131.	In regard to Improved Data Collection and Mobile Access, is the District expecting a proposal for a CMMS system *with a new* field data collection solution, to replace the District's current field mobile application(s)? Or, is it the District's intention to have a CMMS system that can be used in the office or the field, *integrating with its current* field mobile application(s)?
Answer: The District is looking for a solution which satisfies the requirements listed in the RFP in the most efficient and cost effective manner.

132.	Is the District expecting an implementation plan and pricing for a mobile field data collection software, as part of the CMMS?
Answer: The District is looking for a solution which satisfies the requirements listed in the RFP in the most efficient and cost effective manner. We expect the pricing plan to allow the District to determine cost of the solution.

133.   2.1.2: Please explain details and purpose of the "equipment tag numbering system (ESP 130.0 and WESP 130.0)"
Answer: See Appendix A.

134.   2.2: Please explain details and purpose of the "finalized project asset manifest/Equipment Log Spreadsheet"
Answer: This is a manifest of assets which are being created as part of a project. We would like the ability to load this information into the solution so that data entry doesn't need to be done.

135.   2.13: Please explain details and purpose of requirements concerning the "Interface with the District's FIS system to provide a means by which the actual costs accrued can be displayed on the asset"
Answer: Costs on repair orders include labor, parts, and equipment. FIS information will be needed to determine this.

136.   3.3.1.4: How are documents stored in the district's DOC system. Are they accessible via URL?
Answer: The DOCS system mostly stores PDF's and TIFF's. They are accessible on an the District intranet.

137.   6.7: Is the District needing the collected documents to be stored in the DOC system, or a *standalone* document management system?
Answer: The District would like the CMMS solution to interface with the DOC system.

138.   10.2.7: Please explain requirements of the "interface with the District Employee Information system so that permissions can be set based on a named staff or a job position"
Answer: The District would like the ability to set permissions on what a user can do in a CMMS system based on job classification. The system would need to interface with the District employee system for that.

139.   15.1: Can the District explain details and purpose of the round sheet templates? What type and how many records does EBMUD expect to convert and import into the system?
Answer: An employee might have a task to do a quick visual inspection of several assets during a shift. We would want a way for the employee to specify when this was done and to record that everything was ok or to add notes of potential issues.

140.   2.4 Asset Data Analysis (page 10) - What is the level of asset detail info that needs to be made available for mobile app?
Answer: Requirement 1.3 states, "System should allow the use of Windows, Mac, iOS, and Android devices to allow for access for employees both in the office and in the field."

141.   2.4 Asset Data Analysis #3 (page 10) -How do you classified the asset failure in the asset class?
Answer: Asset failure happens when an asset can't perform its function without being refurbished or replaced.

142.   2.4 Asset Data Analysis #4 (page 10)- How do you quantify the amount district spent on electrical work for a given asset class at a given location? Is that the time spent on labor and/or material?
Answer: The amount spent on a work order in generate is the total labor costs, plus the material cost, plus the equipment usage cost. The labor cost is typically hours worked times the cost of the employee to the District.

143.   3.1.1. General Requirements: #1.3 (page 10)- What is the standard/typical mobile device that the district currently has? Is it Android or iOS based devices?
Answer: The majority of field staff currently use iOS devices over Android devices.

144.   3.1.1. General Requirements: #1.6.3 (page 11) - Could you please elaborate on the "Nearby assets" requested functionality and its use case for mobile app?
Answer: This would provide the ability for a user in the field to see which District assets are close to their current location.

145.   3.1.4 WorkOrders #4.23.3 (page 16)- Would the purchasing process includes acquiring product/inventory outside of the district warehouse?
Answer: See question #95.

146.   3.1.4 Work Orders #4.29.2 (Page 17)-How does the workgroup or shop is being grouped? Would it be possible to have a resource being assigned to multiple workgroup?
Answer: See question #90 for a further explanation of workgroup. An employee can be assigned to different workgroups at different times.

147.   3.1.4 Work Orders #4.34 (Page 17)-What is the functionality requirement of Safe Work Permit integration in Work Order?
Answer: See Appendix B.

148.   3.1.4 Work Orders #4.34 (Page 17)-What is the interface type available for the Safe Work Permit system?
Answer: See Appendix B.

149.   3.1.6 Photographs #6.7 (Page 17)-What is the external document management system to be used to store the attachment?
Answer: DOCS system mentioned in Appendix A of the technical requirements.

150.   3.1.6 Photographs #6.7 (Page 17)-Does the new CMMS system still need to retain the attachment after it's being stored in the external system?
Answer: External here refers to external to the CMMS solution. It would currently be the DOCS system mentioned in Appendix A of the technical requirements.

151.   3.1.6 Photographs #6.7 (Page 17)-Will there be any offline capability need for the attachment after the photo is being attached?
Answer: Photographs attached in off-line mode should be uploaded to the CMMS solution.

152.   3.1.7 Planned Maintenance #7.3 (Page 18)-What's the underlying technology and the interface types of the SCADA system?
Answer: This District prefers not to give out this information.

153.   3.1.18 General Asset Management Functionality #18.1 (page 22)-How does the computation of risk is being calculated currently? Does it factor any external system outout?
Answer: We are asking vendors to describe how their solution handles this irrespective of how the District handles this. If the solution needs information from an external system to handle this, the information needed should be listed.

154.   3.1.18 General Asset Management Functionality #18.2/18.3 (page 22)-Is there any calculation/logic to determine the replacement/rehabilitation of the key asset? Is there any metric that would come from external system?
Answer: We are asking vendors to describe how their solution handles this irrespective of how the District handles this. If the solution needs information from an external system to handle this, the information needed should be listed.

155.   4.3.4 Leak Repair – Fluid Conservation Systems (FCS) Leak Detection #7.3 (page 29) - 4.4.4 Leak Repair – Non-Emergency #17.3 (Page 31)-How does the STS calculate the count and list of the customer affected?
Answer: Based on the valves closed during a main repair, we can determine services affected.

156.   4.9.4 Main Extension – Site Ready for Extension #1 (page 39)-What's the underlying technology and the interface types of the Infrastructure Project Tracker?
Answer: The Infrastructure Project Tracker is an application which was built in house.

157.   Interfaces 5.1.1 (page 9)-What middleware tool(s) does the district use/intend to use?
Answer: John Refer to Attachment B – Technical Requirements Appendix A (Interface Types Column).

158.   Data Handling and Retention 8.4.3 (page 13)-How long is the district data retention policy?
Answer: he District would never want to lose any asset or work order information.

159.   Is there any MDM architecture currently being used /in planning in the district? How does the new CMMS fit in the MDM architecture?
Answer: There is no current MDM architecture currently being used or in planning at the District.

160.   What would be the MVP (Minimum Viable Product) criteria for the new CMMS?
Answer: Proposed solutions should specify which requirements can be met and which can't.

161.   Can you share EBMUD approximate budget for this project?
Answer: The District has allocated a budget for this project.

162. To what extent is EBMUD seeking a single integrated "platform-based" solution that can be configured to address your current Functional and Technical requirements while offering rapid development capabilities to enable you to quickly and continually adapt your solution to changing conditions over time to maximize your ROI for this solution? To what extent would this also be weighted in your solution evaluation criteria?
Answer: The District is looking for a solution that address both functional and technical requirements. RFP responses will be evaluated and scored according to the evaluation criteria provided in the RFP section B in the table labeled Evaluation Criteria.

163. The District mentions wanting to utilize an Agile implementation methodology.
   a. Is the District looking for a true, fully Agile implementation or is the District expecting a Waterfall/Agile hybrid approach?
   b. Has the District used a fully Agile methodology on previous enterprise software implementations?
   c. Does the District have certified Agile staff?
Answer: The District has implemented an Agile methodology with previous enterprise software implementations. We have limited certified Agile staff.

164. What is the District's Electronic Timesheet System? Is this a self-written solution? Would the district be open to a replacement? What platform/database is this current on? Does it have API's, etc?
Answer: The Electronic Timesheet System is a customized time tracking solution integrated with various systems at the District. Replacement is not considered for this effort.

165. What is the District's Financial Information & Procurement System? Is this a self-written solution? Would the district be open to a replacement? What platform/database is this current on? Does it have API's, etc?
Answer: The District's Financial Information & Procurement System is Oracle Financials.

166. What is the District's New Business Application system? Is this a self-written solution? Would the district be open to a replacement? What platform/database is this current on? Does it have API's, etc?
Answer: The New Business Application System is used solely by the New Business Office to track large new water service applicant projects including large standard services, private fire services, hydrants, water main extensions and main relocation. The Interface is Web Service API.

167. What is the District's Infrastructure Project Tracker System? Is this a self-written solution? Would the district be open to a replacement? What platform/database is this current on? Does it have API's, etc?
Answer: The District's Infrastructure Project Tracker System is used to track Infrastruture projects (pipeline as well as facilities) from inception to completion. The Interface is Web Service API.

168.   What is the District's Billing System System? Is this a self-written solution? Would the district be open to a replacement? What platform/database is this current on? Does it have API's, etc?

Answer: Refer to Attachment B – Technical Requirements Appendix A. The billing system is a Java based application and not in scope to be replaced with this project.

169.   Please provide details regarding your current GIS such as vendor, version, system architecture, licensing, etc.
Answer: Refer to Attachment B – Technical Requirements Appendix A.

170.   Please provide an overview of your asset repository database.
Answer: Refer to Attachment B – Technical Requirements Appendix A.

171.   Please provide details regarding Customer Watch
Answer: Customer Watch is the District's Customer Information System (CIS), brought live in September 2011. It is a single piece of software that manages Billing, Statements, Meter Reading, Meter Inventory, General Ledger, Customer Service, Customer Information Management, and Service Orders, among other functionality.

172.   What are the District's data management goals?
Answer: Not within scope of this RFP.

173.   Page 8, Technical Criteria B – lists Business Continuity/Disaster Recovery – is this in reference to a hosted or SaaS system?
Answer: No.

174.   What are the District's exit strategy requirements?
Answer: See attachment B – Technical Requirements Section 9 Exit Strategy.

175.   Can the District share its exit strategy requirements?
Answer: See attachment B – Technical Requirements Section 9 Exit Strategy.

176.   Can you provide some information related to the new systems (Financials, Procurements, Human Resources, Customer Watch), such as the technology used?
Answer: The District's Financial Information & Procurement System is Oracle Financials. Customer Watch is a customized Java application.

177.   Does the District have a mobile device preference?
Answer: See attachment A 3.1.1 General Requirements.

178.   Evidence of Qualification Testing:

a. Please provide an example of an ITA? We assume this is an outside consultant? Who is expected to secure and pay for this?
b. When is this process to take place – after deployment, before, before RFP submittal?
c. Does this impact the Warranty and if so how?

Answer: EBMUD does not require evidence of qualification testing for this RFP. Proposed premise or in the cloud, must be capable of running on commodity hardware and infrastructure.

179. What is the FIS (financial) system vendor, application name and version?

Answer: The District's Financial Information & Procurement System is Oracle Financials. The version of Oracle Cloud Financials changes quarterly.

180. What is the new Warehouse and Procurement system vendor, application name and version?

Answer: Refer to Attachment B – Technical Requirements Appendix A.

181. What is the system equipment usage tracking application vendor, name and version?

Answer: Refer to Attachment B – Technical Requirements Appendix A.

182. Does EBMUD envision integration with the Fluid Conservation System (FCS)?

Answer: Yes.

183. Are all systems listed in Attachment A2 capable of single or bi-directional REST API integration?

Answer: Yes.

184. What version of Maximo is currently in production @ EBMUD?

Answer: The current version of Maximo at the District is 9.0.

185. What are the existing financial and human resources systems currently in production?
a. Do these systems include the Electronic time sheets (ETS)?

Answer: Financials is Oracle Financials. Human Resources systems is PeopleSoft (HCM) Release 8.8 SP1 with PeopleTools 8.43.14.

186. What is the current GIS vendor, product and version in production @ EBMUD?
a. Are there multiple GIS database instances representing the functional areas or is there a common corporate instance for all GIS data & applications?
b. What existing GIS applications (desktop, server & mobile, etc.) are currently in production?
c. Should the WAMS have embedded GIS capability or interface with existing GIS applications?

Answer: ESRI, ArcGIS Enterprise 10.7.1. Answer a) We have one GIS Geodatabase where we store GIS data. Answer b) We have a lot of ArcGIS Portal applications accessible through a browser. We also have some mobile applications using Collector and Survey123. Some of our users have some tools developed to edit some data in Production. Answer c) Yes.

187. Does EBMUD have a standard mobile device and/or ruggedized mobile technology requirement?
Answer: No.

188. In regard to the smaller systems (like the paving tracking system), what type of DB are those running in? Do they have any GIS relationships?
Answer: Oracle. Our Pavement Ordering System (POS) has an old Map Guide GIS interface.

189. Which of the systems are tightly integrated with the District's ETS?
Answer: There are no tightly integrated systems with ETS. ETS is a standalone application with limited interfaces with various systems throughout the District.

190. In regard to the District's financial, inventory, document management, and procurement systems, please respond for each: who are the vendors? do they have API? if not, what are the backend table structures? do they have any GIS relationships?
Answer: The District's Financial Information & Procurement System is Oracle Financials. There is no GIS relationship / integration with Oracle Financials.

191. In regard to the second to last bullet under Scope, Section A: Aligning with the District's IT Strategic plan and integrating effectively with the District's "new major replacement systems for Financials, Procurement, and Human Resources; and the District's existing systems such as Customer Watch (the District's Customer Information System)…" Is this suggesting that the District is in the process of replacing each of these "major replacement systems"? If so, which ones and by when? Will the CMMS need to integrate with the existing systems in place today, or the future replacement system?
Answer: The District is currently implementing Financial, Procurement and Laboratory Information systems. Planning for a Human Resource System replacement has also begun. There is no current plan to replace the Customer Watch system. Integration with these systems is expected.

2.0   Appendix A ESP/WESP

ESP/WESP stand for Engineering Standard Practice and Wastewater Engineering Standard Practice. The following document explains our equipment tag numbering system:

PURPOSE

To provide a uniform means of identifying individual pieces of equipment and systems at District facilities. Equipment tag numbers are utilized on design documents for procurement and installation, for field identification and maintaining records of equipment history, in operating procedures, and for management of instrumentation and control data. The assistance provided by a documented numbering system shall begin when the equipment numbers are assigned before equipment is installed, and continue with tracking the equipment throughout its useful life.

REFERENCE STANDARDS

- ANSI/ISA S5.1, the American National Standard for "Instrumentation Symbols and Identification."
- ANSI/IEEE C37.2, "Electrical Power System Device Function Numbers."
- ANSI/IEEE 803.1, "IEEE Recommended Practice for Unique Identification in Power Plants and Related Facilities - Component Function Identifiers."
- ANSI Z535.1, "Safety Color Code."

BACKGROUND

This standard is based on ANSI/ISA S5.1, which was mainly intended for instruments and instrumentation systems used for measurement and control. This standard also follows the basic tagging format and identifiers listed in ANSI/IEEE 803.1 for equipment codes with few exceptions. The ideas presented by ANSI/ISA S5.1 and ANSI/IEEE 803.1 have been expanded to encompass the equipment and systems that are standard to District facilities. These standards should be referenced for additional information and examples.

District equipment shall have an assigned tag number that will be shared by:

- The affixed equipment tag in the field.
- Design drawings (e.g., piping and instrumentation drawings, loop diagrams, logic diagrams, and installation drawings).
- System functional descriptions.
- Specifications, proposals, purchase requests, purchase orders, and vendor submittals.
- Automation controller programs.
- Maintenance records, including the District's Asset And Infrastructure Management System.
- Installation, Operation, and Maintenance manuals.
- Standard operating procedures and troubleshooting guidelines.
- Lockout/Tagout procedures.

The equipment tag number provides a common reference for any work related to a specific facility or structure.

ENGINEERING STANDARD PRACTICE	ESP	130.0
SUBJECT:	EFFECTIVE	03 APR 15
EQUIPMENT TAG NUMBERING SYSTEM	SUPERSEDES	27 APR 09

SCOPE

This standard applies to the physical identification of fixed equipment used for storage, transmission, treatment, and distribution of raw, non-potable, and treated water. This standard also applies to power generation facilities.

This standard DOES NOT apply to valves and appurtenances (e.g., manual distribution valves, air valves, blow-offs, hydrants, electrical conduits, cables) attached to water distribution pipelines. These items are assigned unique numbers outside this standard.

This standard DOES NOT apply to OP/NET, the District's SCADA system. The Operations and Maintenance Department assigns tag numbers in the OP/NET system for specific points used to monitor and control distinct facility parameters. However, the physical equipment tag numbers assigned under this ESP will be coordinated with the OP/NET system where possible. Engineering documents will identify the OP/NET tag number with the associated equipment tag number as applicable.

Equipment is defined as installed fixtures, including the following subsets: major equipment, instrumentation, and valves. Unless otherwise noted on drawings or project specifications, the following equipment will be tagged per discipline as follows:

Mechanical

- *Instruments*: all instruments;
- *Major Equipment*: all major equipment (e.g., pumps, fans, compressors, strainers, air handling units, etc.); and
- *Valves*: all valves in the main flow of the process stream, critical for the system to function, or any valve that could be referenced in a procedure to be used for a test, vent, drain, isolation, etc.

Electrical

- *Major Equipment*: all major equipment (e.g., motor control center (MCC), power panel, lighting panel, local control panels, switchboard, switchgear, transformer, unit substation, variable frequency drives, generator, etc.);
- *Circuit Breakers*: Refer to Table 1 – Component Devices in Major Equipment;
- *Relays*: protective relays; and
- *Component Devices*: Devices installed inside major equipment (refer to Table 1 on page 3).

In general, any valve, instrument, or piece of equipment that will have a tracked maintenance record or may be identified in a procedure should have a unique equipment tag number.

ENGINEERING STANDARD PRACTICE

	ESP	130.0
SUBJECT:	EFFECTIVE	03 APR 15
EQUIPMENT TAG NUMBERING SYSTEM	SUPERSEDES	27 APR 09

Table 1 - Component Devices in Major Equipment

Major Equipment	Voltage Class (See Legend)	Feeder Breaker	Main Breaker	Motor Starter	Multifunction Protective Relay	Protective Relay	Transformer	Current Transformer	Potential Transformer
Motor Control Center	LV	✓	✓	✓	✓	✓	✓		
Power Distribution Panel	LV		✓						
Reduced Voltage Starters	LV				✓				
Switchboard	LV	✓	✓		✓	✓	✓		
Switchgear	LV	✓	✓		✓	✓	✓		
Unit Substation	LV	✓	✓	✓	✓	✓	✓		
Variable Frequency Drive	LV				✓				
Reduced Voltage Starters	MV				✓	✓			
Switchgear	MV	✓	✓	✓	✓	✓	✓		
Unit Substation	MV	✓	✓	✓	✓	✓	✓		
Variable Frequency Drive	MV				✓				
Unit Substation	HV	✓	✓	✓	✓	✓	✓	✓	✓

✓ = Requires a Tag

LEGEND

LV   0 – 600V
MV   2.4kV – 69kV
HV   115kV – 230kV

The major equipment and component device equipment codes i.e., MCC and BKR are found on DWG. 9492-G-006.

Equipment that is generally not tagged includes:

- Mechanical:
  - Instrument isolation valves and diaphragm seals;
  - Small valves in a packaged piece of equipment; or
  - A valve that is associated with one specific piece of equipment (e.g., a blow-off valve on a y-strainer).

- Electrical:
  - Bus;
  - Circuit breakers for low voltage lighting panels, control panels, remote terminal units, and programmable controllers;
  - Disconnects for low voltage (less than 600V), fused or non-fused; must be located and arranged so the purpose is evident;
  - Instrument power supplies;
  - Hand switches and lighting control switches; and
  - Component devices in Table 1, which do not require a tag.

IDENTIFICATION SYSTEM

The equipment tag number contains a series of coded information, such as location, facility, and equipment type, which is unique to that particular item. The tag number will be constructed of some, but not all, of the following information related to the equipment:

- Facility Number,
- Aqueduct Station,
- Raw Water Aqueduct,
- System,
- Equipment Type,
- Identification Number, and
- Specific Modifiers.

Therefore, the equipment tag number provides descriptive information to field personnel who encounter unfamiliar equipment.

A unique tag number will be assigned to each item supplied as a unit. For example, a compressor package, valve and valve operator, pump and motor combination, will each have one tag for the entire unit. The complete equipment tag used to identify a particular item will have the following structure:

Location –	_System_ –	_Equipment Code_ –	_ID Number_ –	_Modifier (Optional)_
(LOC)	(SYS)	(EQP)	(ID#)	(MOD)

This basic system is used to identify all equipment. The information used in each place in the tag number will vary based on the equipment's application as described below. See "Table A – General Tag Numbering System – Examples."

DEFINITIONS

Location (LOC)

This is a two-to-four digit number used to identify the location of the equipment. This is analogous to the "Project Identifier" in Table 1, named "Unique Identification Code," field 1 of IEEE 803.1. The location may be either the Facility Number or the Aqueduct Station Number as applicable.

Facility Number:

This is a two-to-four digit number assigned to each facility that uniquely identifies the facility in which the equipment is installed. The Asset Management Section within the Maintenance Operations Division of the Maintenance and Construction Department assigns facility numbers. Existing numbers can be accessed on the District's Intranet in the "Facilities Guide." New numbers shall be requested by the Project Engineer during the design of a new facility or for any existing facility without an assigned number. The facility number will be indicated in the lower right-hand corner above the title block of the related Process and Instrumentation Diagram (P&ID) and related electrical drawings. Where equipment can be associated with more than one facility, the major facility number is used. An example of this situation is the single switchgear used for a water treatment plant and a pumping plant. The medium voltage switchgear located at Maloney Pumping Station, Facility No. 314, feeds Sobrante Water Treatment Plant, Facility No. 236. The facility number for the medium voltage switchgear will be Facility No. 236 because Sobrante Water Treatment Plant is the major facility.

Water treatment plant equipment will share the same facility number for all systems regardless of the location.

Another example is a MCC feeding two pumping plants, Maloney (Facility No. 314) and Greenridge (Facility No. 298). In this case, Maloney's facility number shall be selected because it has a larger pumping capacity.

Aqueduct Station Number:

This is a unique two-to-four digit number taken from the original aqueduct stationing. It is used to reference the location of an appurtenance in relation to the aqueduct maps. Station number will only be used to identify remote aqueduct equipment that is not associated with a facility number. An example of a station number is 1258, which is near the Calaveras Wasteway facility for Aqueduct No. 3.

Equipment In A Facility:

Equipment located in a facility shall use the facility number for LOC. For example, the altitude valve (level control valve) at San Catanio Reservoir (facility no. 1520) in the treated water system is tag number 1520-TWS-LCV-704. Another example is a flow control valve located inside Campo Seco Center (facility number 891) on the Mokelumne No. 3 Aqueduct would have a tag number 891-AQ3-FCV-001.

Equipment At The Raw Water Aqueducts:

There are certain appurtenances (blowoffs, air valves, etc.) on the aqueducts that are not located at a specific District facility. These appurtenances shall use the Aqueduct Station Number for LOC. An example is a surge control (i.e., pressure control) valve located on Mokelumne No. 1 Aqueduct near the Mokelumne No. 3 Aqueduct Calaveras Wasteway at Station 1258 is equipment tag number 1258-AQ1-PSV-001.

System Code (SYS)

This is a two- or three-letter code used to identify the primary system to which the equipment is associated. This is analogous to the "System Identifier" in Table 1, named "Unique Identification Code," field 2 of IEEE 803.1. Treatment chemical systems shall be distinguished with a two-letter code, while all other systems shall have a three-letter code. The primary system code applicable to the drawing shall be indicated in the lower right-hand corner above the P&ID title block and in a tagging note on electrical drawings. Tag numbers for components in secondary systems shall indicate the system code on each bubble tag.

For water, gas and treatment chemicals, the general rule in selecting a system code is to choose a code that correctly identifies what is in the pipe that connects the component. For example, if a pressure transmitter is connected to a pipe with treated water inside the pipe, then the system code for that transmitter is TWS (Treated Water System).

A system code would typically be chosen to define the type of fluid in the pipe in the distribution system. Refer to the "System Codes and Tag Colors" table on drawing 9492-G-007 for a listing of system codes.

Equipment At The Raw Water Aqueducts:

An exception to the general rule is for raw water equipment and appurtenances on the raw water aqueducts. These shall not use RWS for the system code, but shall use the raw water aqueduct system codes given on 9492-G-007. For example, the system code for Mokelumne No. 2 Aqueduct is AQ2.

System Code Boundaries:

Multiple systems are frequently connected at some point and the boundary between the primary and secondary systems must be defined. The primary system shall be the main system defined above the P&ID sheet title block or by the electrical drawing tagging note and secondary systems shall be additional systems that connect with the primary system on the same sheet. The following provides more information for system code selection:

- The system code boundary between a primary and secondary mechanical system is generally at the downstream end of the first isolation valve if there is no backflow prevention device and at the downstream end of the backflow prevention device if one exists. The first isolation valve on an outflow from the primary system is part of the primary system, while the first isolation valve on an inflow to the primary system is part of the secondary system. An example of this is a boundary between a (TWS) and a service water system (SVW). This boundary requires a backflow prevention

device, so the backflow device and components upstream of the backflow device are assigned the TWS code while components downstream of the backflow device are assigned the SVW code.

- The system code boundary between the electrical power system and the mechanical system is at the electro-mechanical conversion device, e.g., the motor, solenoid, etc. For example, a treated water pump motor will be assigned the process system code of TWS, while the first breaker and other electrical equipment upstream of the electro-mechanical conversion device is typically assigned the Electric Power Supply (EPS), Standby Power Supply (SPS) or Electric Power Generation (EPG) system code.

- For instrumentation and control system code boundaries, the instruments in the signal path will retain the same system code as the field device from the field device through the Programmable Logic Control (PLC) and on to the Remote Terminal Unit (RTU). However, devices like the PLC and the RTU have a system code of FCS for "Facility Control System" since they are typically used to control devices with multiple system codes.

Equipment Code (EQP)

This is a two- or three-letter code used to identify the equipment type or function. This is analogous to the "Component Function Identifier" in Table 1, "Unique Identification Code," field 3 of IEEE 803.1. An example of an equipment code is "PMP" for a pump. Refer to the "Equipment Codes" table on drawing 9492-G-006 for a listing of common equipment codes. For new equipment codes not appearing on 9492-G-006, refer to ANSI/IEEE 803.1. The instrument portion of this table is based upon ANSI/ISA S5.1. For instruments not appearing on 9492-G-006, refer to "Instrument Letter Identification Table" on standard drawing 9492-G-002, ANSI/IEEE 803.1, or ANSI/ISA S5.1.

Identification Number (ID#)

This identification (ID) number indicates:

a. The train number for train-related equipment.

b. The loop number for wired instruments.

c. The sequence number for equipment that is neither train- nor loop-related.

d. The electrical enclosure number that a breaker or switch is mounted.

This is analogous to the "Sequence Code" in Table 1, named "Unique Identification Code," field 4 of IEEE 803.1.

A train is defined as a group of equipment that is operationally related to perform a specific function. Generally, a train consists of a major piece of equipment, like a pump or a tank, and other equipment associated with that piece of equipment, like a discharge valve. A train can be either singular or multiple parallel groupings.

A singular train is an equipment group that does not have redundant equipment groups that serve a similar operational purpose. An example of a singular train would be a day tank and the equipment associated with that day tank at a filter plant. Associated equipment would include the site gauge, inlet and outlet valves, etc. For an example, refer to drawing 1999-J-002, "Feed System P&ID."
Multiple trains are parallel equipment groups that serve a similar operational purpose, e.g., to provide redundancy or increase total capacity. An example of a multiple train would be a pump and the equipment associated with that pump in a distribution pumping plant with multiple units. Associated equipment would include suction and discharge isolation valves, pump control valves, etc. For an example, refer to drawing 1999-J-003, "Pumping Plant P&ID." For equipment in multiple trains, the first group has an ID number of 001, the second is 002, etc.

A loop is defined in ISA S5.1 as a combination of two or more instruments or control functions arranged so that the signals pass from one to another for the purpose of measurement and/or control of a process variable.

A wired instrument is defined as any instrument that has a digital or analog signal input or output that is wired to pass the signal between itself and an external device. A wired instrument shall utilize the loop number as its ID number. Wired instruments that are part of a loop containing multiple field instruments shall use the same loop number for their ID numbers. This is to facilitate control programming. In an instrument loop containing multiple wired instruments that have the same equipment code within the same system but in different locations (e.g., LCP, OWS, RTU, ACC), a sequential letter modifier will be added (i.e., -A, -B, -C) after the ID number to provide discrete ID. Lettering on the P&ID proceeds from bottom to top. In an instrument loop containing multiple wired instruments that have the same equipment code within the same system and in the same location (e.g., the same LCP), a sequential integer modifier will be added (i.e., -1, -2, -3) after the ID number to provide discrete ID. Numbering on the P&ID proceeds from left to right. Wired instruments in multiple trains shall have the train number indicated by adding an integer sequence modifier corresponding to the equipment train after the ID (loop) number (i.e., -1, -2, -3). An example of this is two caustic storage tanks with level transmitters where the tanks are labeled CA-TNK-101 and CA-TNK-102 and the transmitters are labeled LT-103-1 and LT-103-2, respectively. For chemical and quality monitoring systems, the first number of a loop number is related to the subsystem that is associated with the instrument. The "Instrument Equipment ID (Loop Number) Designation" table on drawing 9492-G-006 provides details for selecting loop numbers. At pumping plants, reservoirs, regulators, and rate control stations, the loop number for individual instruments shall be the same as the associated OP/NET RTU loop number where feasible. Contact OP/Net for a RTU loop number for new facilities or existing facilities without a loop number.

Equipment not related to a train or loop shall be numbered sequentially within a system. Most of the hand valves along a pipe shall be numbered sequentially following the process flow path. Single equipment items with specialized applications (e.g., reservoir altitude valve) may use the structure number. The advantage to this is a unique ID number for each altitude valve.

All ID numbers shall have a minimum of three digits, therefore, numbers smaller than 100 should contain preceding zeros, i.e., 001. The ID number shall be indicated in the bubble that points to the equipment symbol on the related P&ID. ID numbers from 001 to 020 are generally reserved for multiple

train-related equipment. ID numbers from 021 to 999 are generally non-train-related items. The number 020 reflects the expected ultimate build-out quantity of any train at the District. Refer to drawing 9492-G-007 for additional ID number details.

For any particular type of equipment, the lowest ID number shall start at the left of a P&ID sheet and the numbers shall sequentially increase in the direction of flow. ID numbers used in a primary system may be repeated in a secondary system.

For chemical and quality monitoring systems, the first digit of the three-digit ID shall represent the related subsystem as defined in the "Instrument Equipment ID (Loop Number) Designation" table on 9492-G-007. An example of this is a caustic feed pump ID number of CA-PMP-301, where the 3 in the first digit position represents that the pump is part of a feed system. Coordination of this first digit with the proper subsystem shall also be included in train-related systems.

For electrical supply, the first digit of the three-digit ID shall represent a particular device mounted in the enclosure. An example of this is a breaker with an ID number of BKR-301-MCC, where the 3 in the first digit represents that the breaker is enclosed in MCC-003. MCC is used as the modifier to describe that the breaker is specifically a component in a MCC. Relays (RLY) and Multifunction Protective Relays (MPR) will be tagged with the same ID number as the related breaker. See 0000-E-000 Example Single-Line drawing attached at the end of this document.

Modifier (MOD)

This is a letter or number up to three characters that identifies the sequence number for train- and loop-related equipment, or other descriptor. A modifier is not required for all equipment tag numbers. Multiple modifiers may be added.

A *sequence* modifier shall be located inside the bubble that points to the equipment symbol on the related P&ID. A sequence modifier distinguishes one piece of equipment from another related piece with the same equipment code and ID (or instrument loop) number by adding integers 1, 2, 3, … or letters A, B, C, … (see discussion in previous ID number section). Integer modifiers shall be used to distinguish between instruments where there are more than one instrument within a loop that have the same system and equipment code. Letter modifiers shall be used to distinguish two instruments with the same equipment code and ID number, but with different functions. A distribution example is a pressure transmitter for a regulator on the suction or source (PT-458-S) versus the pressure transmitter on the discharge (PT-458-D). A treatment plant example is a level transmitter on the left half of the number 3 filter (LT-003-L) versus the level transmitter on the right filter half of the number 3 filter (LT-003-R).

A *special function* modifier shall be located in the upper right of the instrument bubble that points to the equipment symbol on the related P&ID. This modifier can further describe the instrument functionality. Examples include using "SS" for Start-Stop and "OO" for ON-OFF. This modifier is also used on the P&ID to define a process-connected instrument range or setpoint, but a modifier used in this manner is located directly above the bubble and this additional information is not considered as a part of the tag number. See drawing 9492-G-002 for a list of the special function modifiers. For other examples, refer to drawing 1999-J-001, "Storage & Transfer System P&ID."

<u>For electrical equipment:</u>

The modifier shall be added to the equipment ID number when a component device is enclosed in major equipment. The list of major equipment used as modifiers can be found on Table 1 - Component Devices in Major Equipment (page 3).

<u>*Breakers and Switches*:</u>

A modifier shall be added to define the type of related electrical enclosure in which a breaker, non-fused switch, or fused switch is mounted. An example of this is a breaker ID number of BKR-301-MCC, where the MCC is used as the modifier to describe that the breaker is a specific component in MCC-003. See 000.0-E-000 Example Single-Line drawing attached at the end of this document.

<u>*Protective Relays*:</u>

Relays may serve single or multiple device functions. A single function relay shall be tagged with the equipment code "RLY." A relay that serves multiple device functions shall be tagged with the equipment code "MPR" for Multifunction Protective Relay. Single function protection relays shall be further defined by the device function number that is given in ANSI/IEEE C37.2. These same relay function numbers are also found in ANSI/IEEE 803.1 as function identifiers, which conform to C37.2. An example of a dual function relay is the common 50/51 relay, a combined instantaneous and timed overcurrent relay, with an electronic metering and protection package. The 86 in equipment tag number RLY-107-SWR-86 represents the device function number of RLY No. 7 located in SWR-001. All relay device function number(s) shall be listed in the text description or "device name" on the cabinet tag nameplate. RLY and MPR shall be tagged with the same modifier as the related breakers enclosure. See 0000-E-000 Example Single-Line drawing attached at the end of this document.

Exception: Where MPR and RLY devices are located other than in the same breaker enclosure, the modifier shall match the location of the device. The location of the MPR or RLY could be in a SWB or control panel (CP).

CONFORMING EXISTING TAGS

When updating tags at an existing facility for conformance to this ESP, attempt to use as much of the existing equipment tag number as possible. Most updated tags shall require the addition of a LOC and a correction of the tag structure order. Many updated tags shall require a correction of the system and equipment codes. For ID numbers smaller than 100, the preceding zeros shall be added to the ID number to attain a three-digit number if none exist. The reason for strictly retaining the ID number is that many other design documents reference the same number (electrical drawings, wire numbers, old shop orders, etc.). Retaining the existing ID number will have preference over the general rule of sequentially numbering from left to right with direction of flow.

The Asset Management Section shall be contacted when an existing ID number is reassigned to a new ID number. The existing ID number shall remain in the tags "equipment description" in parenthesis. See example below, DP2 is renamed LP-004.

> Ozone Bldg, Swgr Rm No. 111. Lighting Panel No.4 (DP2)
> 238-EPS-LP-004

TAG FORMAT

Field Tags

The equipment tag number shall be engraved on the appropriate two-color laminated tag and affixed to the equipment. Cabinet tags shall be attached with stainless steel screws or waterproof adhesive and hanging tags attached with stainless steel cable. Tag colors shall follow ANSI Z535.1. Refer to the "System Codes and Tag Colors" table on drawing 9492-G-007 for a list of tag colors for materials commonly used at the District. If a hanging tag cannot be safely affixed to the specific equipment, then a cabinet tag shall be placed on the cabinet access door for that equipment. Hand switches that are located on the main control panel will generally not be field tagged.

Drawings

Tag Bubbles:

The equipment tag number will be referenced on the P&ID and other drawings. For P&IDs, the equipment code, ID number, and sequence modifier will appear inside the equipment identifier bubble, while the facility or station number, and the primary system code will appear in the lower right-hand corner of the drawing, just above the title block. Instruments will use the circular bubble and other equipment will use a round-edged rectangular bubble. Facility numbers are typically not shown in the tag bubble on the P&ID. It is assumed that the facility number shown above the title block precedes all tag numbers on that sheet unless otherwise shown. The primary system code is assumed to apply to equipment on the P&ID that are not specifically tagged with a secondary system code. Any secondary system codes will appear at the upper left outside of an instrument bubble or at the left of the equipment code inside an equipment bubble. Special modifiers will appear at the upper right outside of an instrument bubble and at the right of the ID number inside an equipment bubble.

System Boundary Symbols:

Primary to secondary system boundaries will be defined on a P&ID with a symbol consisting of dual arrows pointing at a divider line with the appropriate system code adjacent to each arrowhead on either side of the divider. The boundary symbol will be located to the far upstream or downstream end of a component in order to avoid confusion about the applicable system for that component. The boundary symbol will be illustrated as follows:

System
Boundary
Symbol

TWS   SVW
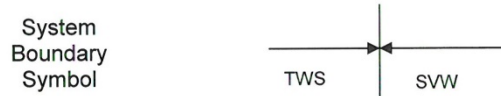
FORMAT EXAMPLES:
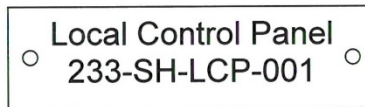
PHYSICAL TAG   DRAWING BUBBLE

Insert secondary facility and
system code here if different
from the primary
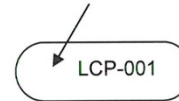
Cabinet Tag
(0.75"x 2.5")

Local Control Panel
233-SH-LCP-001

LCP-001

(P&ID - Facility number and primary system
code are shown above the title block)

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Instrument Hanging Tag (1"x 2.5")

LOC: 510
SYS: QMS
EQP: AIT
ID-MOD: 401-CL2

Insert secondary system code here if different from the primary

QMS   CL2

AIT

401
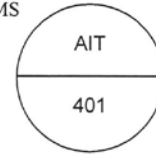
(P&ID - Facility number and primary system code are shown above the title block)

Equipment Hanging Tag (1"x 2.5")

LOC: 1520
SYS: TWS
EQP: PMP
ID-MOD: 001

Insert secondary facility and system code here if different from the primary

PMP-001
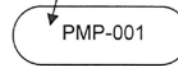
(P&ID - Facility number and primary system code are shown above the title block)

(Continued next page)

Project Tag Documentation:

An asset list including tag numbers shall be generated for each project. This list provides the minimum maintenance database information. For projects constructed by District forces, the design engineer will typically generate the list. For contract projects, the contractor shall develop the tag table as part of the submittal process (ref. Section 01 91 13.10, Asset Identification Tags). For large contract projects, it is recommended that the engineer generate the ID tag portion of the list directly from a database in the P&ID drafting software. This partial asset tag list should be made available to the project contractor upon request. The final tag list shall be added to the DOX system.

The Asset Management Section enters the information from the final asset tag list into the District's "Asset and Infrastructure Management System" to facilitate maintenance.

The asset tag list spreadsheet template is available in Appendix A of the District Master Specifications.

_____

XAVIER J. IRIAS
Director of Engineering and Construction

The following is a tag numbering flowchart:

ESP 130.0 Equipment Tag Numbering System
- Tag Numbering Flowchart -

TAG FORMAT = LOC-SYS-EQP-ID#-MOD

START

Is the device a part of the raw water Aqueducts not associated with a Facility? — **Yes** / **No**

LOC
Use the facility number provided by the Information System Department and found in the Facility Guide.

LOC
Use the Aqueduct Station number determined from the Aqueduct drawings.

SYS
Use the "Facility Related" System Codes shown on drawing 9492-G-007.

SYS
Use the "Raw Water Aqueduct System Codes" shown on drawing 9492-G-007 for the corresponding aqueduct.

EQP
Use the equipment codes shown on drawing 9492-G-006.

Is the device a part of multiple equipment trains? — **Yes** / **No**

Is the device a wired instrument? — **Yes** / **No**

Is the device a wired instrument? — **Yes** / **No**

ID#
Chemical and QMS systems: Determine the appropriate series number from 9492-G-006 and select a train number from _01 to _20. (e.g. 301 where 300 is the series number for chemical feed and _01 is the first device in the series.

All other systems: Select the lowest available train number from 001 to 020.

ID#
Chemical and QMS systems: Determine the appropriate series number from 9492-G-007 and select the next available sequential number greater than _20. (e.g. 121 where 100 is the series number for chemical storage and _21 is the first device in the series.

Electrical supply: For breakers and switches, use the related electrical enclosure ID# as the first digit and sequential numbering for the remaining two digits. (e.g. BKR-301-MCC, where the 3 in the first digit position 301 represents that this is the first breaker in MCC-003). For relays, use the same ID# as the related breaker.

All other systems: Select the next available sequential number greater than _20 (i.e. 021 is the first number)

ID#
Chemical and QMS systems: Determine the appropriate loop series number from 9492-G-007 and select a loop number greater than _20. (i.e. 221 where 200 is the series number for chemical transfer and _21 is the first device in the series.

All other systems at Water Treatment Plants or the MAB: Select the next available sequential number greater than _20 (i.e. 021 is the first number)

All other systems not at Water Treatment Plants: Use the local RTU loop number. The system code or a modifier will distinguish multiple instruments of the same equipment type.

ID#
The ID number is the loop number.

Chemical and QMS systems: Determine the appropriate loop series number from 9492-G-006 and select a loop number from _01 to _20. (i.e. 402 where 400 is the series number for treated water quality monitoring and _02 is the second loop in the train. It is recommended that the first loop number be at least one number higher than the last train number.

Wired devices serving a similar function to another device within a related train will be assigned the same loop number. (e.g. level transmitters on different tanks within a related train are assigned the same loop number)

All other systems at Water Treatment Plants or the MAB: Select the next available sequential number greater than _20 (i.e. 021 is the first number)

All other systems not at Water Treatment Plants: Use the local RTU loop number. The system code or a modifier will distinguish multiple instruments of the same equipment type.

MOD
For multiple devices of the same equipment type in the same train, add a modifier by selecting the next available sequential letter or integer. Letters "S" or "D" may be used to differentiate between "Suction/supply" vs "Discharge" location relative to the main device.

Add optional special function mods as deemed necessary. Use the special function modifier codes shown on 9492-G-002.

MOD
Add optional special function mods as deemed necessary. Optionally, an S or D may be used to differentiate between suction/source or discharge/service location relative to the main device. Use the special function modifier codes shown on 9492-G-002.

Component devices shall use the equipment enclosure type as the modifier (i.e. for BKR-301-MCC, MCC designates that this is a breaker in an MCC). See Table 1 - Component Devices in Major Equipment. (pg.3)

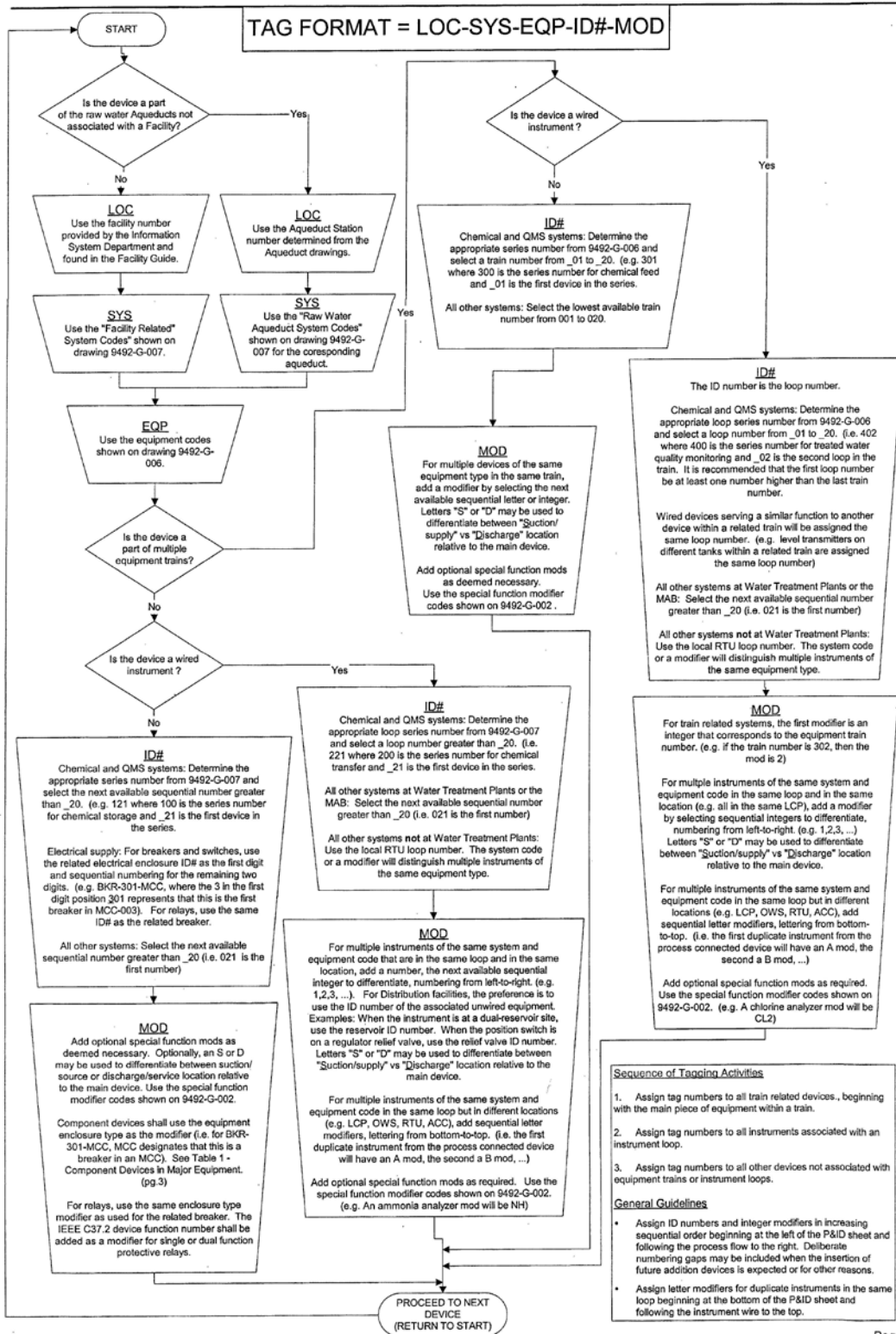For relays, use the same enclosure type modifier as used for the related breaker. The IEEE C37.2 device function number shall be added as a modifier for single or dual function protective relays.

MOD
For multiple instruments of the same system and equipment code that are in the same loop and in the same location, add a number, the next available sequential integer to differentiate, numbering from left-to-right. (e.g. 1,2,3, ...). For Distribution facilities, the preference is to use the ID number of the associated unwired equipment. Examples: When the instrument is at a dual-reservoir site, use the reservoir ID number. When the position switch is on a regulator relief valve, use the relief valve ID number. Letters "S" or "D" may be used to differentiate between "Suction/supply" vs "Discharge" location relative to the main device.

For multiple instruments of the same system and equipment code in the same loop but in different locations (e.g. LCP, OWS, RTU, ACC), add sequential letter modifiers, lettering from bottom-to-top. (i.e. the first duplicate instrument from the process connected device will have an A mod, the second a B mod, ...)

Add optional special function mods as required. Use the special function modifier codes shown on 9492-G-002. (e.g. An ammonia analyzer mod will be NH)

MOD
For train related systems, the first modifier is an integer that corresponds to the equipment train number. (e.g. if the train number is 302, then the mod is 2)

For multiple instruments of the same system and equipment code in the same loop and in the same location (e.g. all in the same LCP), add a modifier by selecting sequential integers to differentiate, numbering from left-to-right. (e.g. 1,2,3, ...) Letters "S" or "D" may be used to differentiate between "Suction/supply" vs "Discharge" location relative to the main device.

For multiple instruments of the same system and equipment code in the same loop but in different locations (e.g. LCP, OWS, RTU, ACC), add sequential letter modifiers, lettering from bottom-to-top. (i.e. the first duplicate instrument from the process connected device will have an A mod, the second a B mod, ...)

Add optional special function mods as required. Use the special function modifier codes shown on 9492-G-002. (e.g. A chlorine analyzer mod will be CL2)

PROCEED TO NEXT DEVICE (RETURN TO START)

Sequence of Tagging Activities

1. Assign tag numbers to all train related devices., beginning with the main piece of equipment within a train.

2. Assign tag numbers to all instruments associated with an instrument loop.

3. Assign tag numbers to all other devices not associated with equipment trains or instrument loops.

General Guidelines

- Assign ID numbers and integer modifiers in increasing sequential order beginning at the left of the P&ID sheet and following the process flow to the right. Deliberate numbering gaps may be included when the insertion of future addition devices is expected or for other reasons.

- Assign letter modifiers for duplicate instruments in the same loop beginning at the bottom of the P&ID sheet and following the instrument wire to the top.

3.0   Appendex B Safe Work Permit

The attached describes Safe Work Permits:

EBMUD

RSP 1300 - SAFE WORK PERMIT

CCR, Title 8, § 3203

Safety Requirement

1300.   A Safe Work Permit shall be created whenever non-Water Treatment Plant personnel perform work on a water treatment plant site that may disrupt operations or may create a hazard to employees and visitors at the Plant. Section 1302 of this RSP specifically defines what activities trigger the need for a Safe Work Permit.

General Information

1301.   Prior to performing work at a Water Treatment Plant, the person seeking to perform the work (Maintenance or District Point-of-Contact for contractors) shall inform the on-duty Plant Operator or Supervisor of the proposed activities. For larger projects such as construction, provide as much advanced notice to the Water Treatment Plant as possible to allow time to address any issues raised.

1302. A Safe Work Permit shall be completed when any of the following conditions apply:

- ♦ Work may disrupt routine plant or process operations, including the shutdown of any equipment affecting the Plant operation.
- ♦ Work includes these listed activities which can create hazards affecting Plant employees and visitors:
  1. Lockout / Tagout
  2. Confined Space Entries
  3. Use of Hazardous Materials
  4. Hot Work
  5. Trenching / Excavation
  6. Fall Hazards / Fall Protection
  7. Lead / Asbestos
  8. "Live" Electrical Work
  9. Designation of Work Zone Requiring Specific PPE
  10. Environmental Concerns
  11. Special Circumstances (Plant Operations)
- ♦ Plant Supervisor deems it necessary.

1303.   Permits may cover a specific task or an entire project. For long term projects, sufficient coordination between Plant Operations and the people doing work on the Plant must be agreed upon (e.g. weekly meetings, daily reviews, etc.).

1304. If additional, unanticipated hazards are discovered during a project or an entirely new group of workers take over, the existing Safe Work Permit shall be modified or a new Permit issued covering all of the prospective hazards.

Responsibilities

1305. Workplace Health and Safety will:
- ♦ Train appropriate District staff on the use of the Permit as needed;
- ♦ Audit this program annually and update this RSP as needed.

1306. Maintenance, Engineering, and Contractors/Visitors will:
- ♦ Check in with the Senior Plant Operator or Supervisor prior to commencing work at a Water Treatment Plant. Advance electronic notification of proposed work is recommended as well.
- ♦ Complete the Safe Work Permit (with assistance from Operations staff as needed).
- ♦ Check in with the Senior Plant Operator or Supervisor when work has concluded and close Safe Work Permit.
- ♦ Engineering staff including Construction Inspectors or other District Point-of-Contacts for contractors and visitors performing work on a Water Treatment Plant will complete the Safe Work Permit in advance of performing work. For large projects requiring more than one Safe Work Permit, this responsibility may be delegated to the Contractor/Supervisor after the initial Permit is completed by Engineering/Plant.

1307. Water Treatment Plant staff will:
- ♦ Review proposed work at the Plant for safety impacts and communication needs between Plant Operations and people working at the Plant.
- ♦ Sign the Safe Work Permit prior to the start of work.
- ♦ Maintain all open Safe Work Permits in the Control Rooms for review.
- ♦ Provide Maintenance, Engineering, or contractor/visitors a copy of the Safe Work Permit upon request.

1308. Completed Safe Work Permits will be maintained at the Water Treatment Plant for one year after completion of work.

Application of Permit

1309. Work within Maintenance Shops and Distribution-controlled Pumping Plants that does not affect Plant Operations do not require a Safe Work Permit.

1310. Proper completion of the Safe Work Permit includes:
♦ Notation of location and description of work. If Maintenance Work Order or Engineering Spec Number exists for Project, include that for reference as well.
♦ Yes/No response for listed Situations/Conditions.
♦ Date/Time work starts and ends.
♦ Name/signature of person performing work and facility representative before and after work.
♦ Restrictions / Comments regarding work. This field should be used to notate PPE-required areas, special LOTO or confined space arrangements, hot work provisions, and other notable issues.

1311. The Safe Work Permit form is contained in Attachment A and available in the District Forms Shop on the Launchpad.

Attachment A
SAFE WORK PERMIT

SAFE WORK PERMIT

EBMUD

This permit shall be completed when Maintenance or contractor/visitor work at a WTP:

- May disrupt routine plant or process system operations.
- Includes the listed activities below. These activities can create hazards to employees and visitors.

Maintenance, Engineering, or Contactors/Visitors (when approved) are responsible for completing this form with Water Treatment staff assistance.

LOCATION:	WORK ORDER/SPEC #:

DESCRIPTION OF WORK:

#	SITUATION / CONDITION	YES	NO
1	Lockout / Tagout for systems, equipment, machines	☐	☐
2	Confined Space Entry	☐	☐
3	Hazardous Materials	☐	☐
4	Hot Work (Welding, Other Spark-Producing Activities, etc.)	☐	☐
5	Trenching / Excavation USA Notified Y / N Electric Shop Notified Y / N	☐	☐
6	Fall Hazards / Fall Protection	☐	☐
7	Lead / Asbestos	☐	☐
8	"Live" Electrical Work (Work On or Near Energized Systems)	☐	☐
9	Designation of Work Zone Requiring Specific PPE	☐	☐
10	Environmental Concerns (Stormwater, Creek Discharge, etc.)	☐	☐
11	Special Circumstances (Plant Operations)	☐	☐

WORK STARTED	Date: Time:
Maintenance/Contractor/Visitor Representative:	Facility Representative:
(Print name)	(Print name)
(Signature)	(Signature)

WORK COMPLETED	Date: Time:
Maintenance/Contractor/Visitor Representative:	Facility Representative:
(Print name)	(Print name)
(Signature)	(Signature)

RESTRICTIONS / COMMENTS FOR AUTHORIZED WORK

Copies to:
- **Facility** (Facility shall retain original for 365 days from date of work completion)
- **Maintenance/Engineering/Contractor/Visitor** (Copies provided upon request)

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13-4

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