**Baseline Development Action 1 Worksheet: Documentation Checklist for Baseline Development**

Worksheet Last Updated By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Worksheet Last Updated On: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Document Baseline Data

**Directions:** Use the table below to identify sources of documentation required for baseline development. Note the primary data owners and verify with them that the documentation is the most recent available and accurate. Add relevant data sources to the checklist, as needed.

Items with an asterisk (\*) are key inputs to the TRN Risk Assessment Excel file and should be prioritized for data collection.

| **Documentation Checklist for Baseline Development** |
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| **Data** | **How the Data is Used** | **Available? Y/N** | **Point of Contact to Obtain Data**  | **Description** (e.g., document title, year updated, contents) |
| **Facility and Critical Load Data** |
| Utility data: monthly energy and water consumption billing data | Monthly consumption data is used to establish site-level energy and water use; provide seasonal use profiles and operational tempo trends; request monthly 12 months minimum, including high operational tempo periods as feasible.  |   |   |   |
| Building interval meter and submeter energy and water consumption data (as available) | Energy and water consumption data collected via advanced meters are used to develop detailed energy and water use load profiles and seasonal trends to estimate energy and water requirements of critical loads within critical facilities; these energy and water requirements are compared to existing redundant system design and used to properly size equipment in Solution Development. |   |   |   |
| Controls systems (EMCS and BAS) | Energy management control systems (EMCS) and building automation systems (BAS) provide a variety of data, such as equipment use and operations and control schemes/sequence of systems and equipment, which is used to understand critical load profiles and potential efficiency and operational improvements. |   |   |   |
| Building characteristics and floor plans | Building-level information provides data on facility location, size, type/function, and equipment housed in the facilities, to understand relationship between critical loads and redundant systems.  |   |   |   |
| Energy and water evaluations | Data from previously conducted comprehensive energy and water evaluations are used to determine known opportunities to reduce energy and water loads and identify facilities requiring assessments for load reduction opportunities.  |   |   |   |
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| **Redundant System Data** |
| \*Backup generator list | O&M programs at large sites may maintain a backup generator list with locations, providing data which can be used to determine whether critical facilities have existing redundant systems.  |  |  |  |
| \*Redundant system design documentation | Data on location, age, system capacity, start-up configuration, fuel storage capacity, and specific loads supported are used to determine redundant system capability to meet critical load requirements; data on design specifications and environmental conditions is used to understand whether design would withstand exposures to relevant hazards (e.g., generator raised in flood-prone areas).  |   |   |   |
| \*Engineering diagrams and process flow diagrams | Engineering design detail, process definition for redundant systems serving critical loads, and instrumentation and control system logic, can inform ability of systems to meet critical energy and water requirements. |   |   |   |
| \*Maintenance schedules and logs | Data from existing maintenance plans, procedures, schedules, and logs of past maintenance dates and findings for redundant systems is used to assess reliability that the system will work as planned. |   |   |   |
| \*Operating procedures | Data from operating procedures provides documentation of normal and emergency operating procedures of redundant systems on critical loads, including start-up procedures and contingency plans (e.g., mutual aid agreements, refueling plans) to inform the risk assessment. |  |  |  |
| \*Maintenance personnel training records | Data from maintenance personnel training records is used to establish whether personnel who maintain and operate redundant systems have adequate training, serving as an indicator that the system will work reliably when it is needed. |  |  |  |
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| **Primary Energy and Water Supply System Data** |
| Onsite distributed energy resources  | Data on onsite power systems (e.g., CHP, PV, battery banks, combustion engines), including capacity, location, and connection of these systems to buildings and the grid, helps understand current capability or potential for critical facilities to rely on these systems for redundancy. |  |  |  |
| Onsite water treatment and storage systems  | Data on water/wastewater treatment facilities, pumping stations, towers, wells, lift stations, and distribution lines, including their capacity, location, and interconnection of these systems, helps understand current capability or potential for critical facilities to rely on these systems for redundancy. |  |  |  |
| Utility system schematic diagrams | Data on utility system schematic diagrams used to establish critical facilities interconnection points and supply sources of power and water and whether the sources provide added redundancy or risk (e.g., dual feeds, dead-end lines). |  |  |  |
| Site maps and GIS data of buildings infrastructure  | Site maps and GIS data are used to establish distance between buildings and supporting energy and water supply and distribution systems and access routes (e.g., refueling redundant systems) for risk assessment and solution development (e.g., opportunities to connect buildings on a microgrid).  |   |   |   |
| Energy and water utility system condition assessments and plans | Data on the age and condition of energy and water supply systems is used to understand whether critical facilities are exposed to additional risk from infrastructure deficiencies (e.g., system capacity issues, known reliability concerns) or reduced risk from planned system upgrades. |   |   |   |
| Hydraulic models | Data on hydraulic models is used to provide information on water system performance that show how the system responds to changing demand and informs operational issues such as low-pressure zones and inoperable valves, which may affect critical facilities.  |   |   |   |