**Solution Development Action 1 Worksheet: Analyze Resilience Gaps**

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

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The resilience planning team will need to analyze gaps in terms of similarities to help identify holistic solutions in Action 2 of the Solution Development module. Using the following questions and tables, the resilience planning team will characterize the gaps and tally the number of gaps in specific categories or associated with resilience attributes to help with the analysis, then document similarities in the gaps.

Steps 1 and 2: Consolidate and Characterize Resilience Gaps
Copy and paste the gaps collected throughout the Technical Resilience Navigator (TRN) process into the following table. Characterize each gap by the type of gap (see **TRN Resource: Categorized Resilience Gaps** for information on gap types) and resilience attributes impacted (see **TRN Resource: Resilience Attributes** for information on resilience attributes). Count up the number of resilience gaps in each category (operational, institutional, technological) and by each of the resilience attributes being impacted (redundancy, robustness, resourcefulness, and recovery) to determine whether there are more gaps associated with a certain category type or resilience attribute. This tally will help identify whether gap identification has focused only on certain types of gaps and whether others should be considered.

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| **Step 1 and 2: Consolidate and Characterize Resilience Gaps** |
| **Gap Description** | **Type of Gap** | **Resilience Attributes Impacted** | **Critical Functions or Loads Impacted by Gap** |
| **Technological** | **Operational** | **Institutional** | **Redundant** | **Robust** | **Resourceful** | **Recovery** |
|  *Tropical Fruit Research does not have enough energy and water to sustain missions for 1 week.* | *X* | *X* |  | *X* |  |  |  | *Data analysis for agricultural research/Kiwi Building Data Center plug loads* |
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| **Total Number of gaps in type or attribute:** |  |  |  |  |  |  |  |  |

Step 3: Refine Gap Description
The resilience planning team should refine the descriptions of each gap to enable development of targeted solutions in Action 2 of the Solution Development module. Once the origin of the gap is defined, the refined description should be recorded in the table below. A gap statement identifies the difference between the current and desired state of a site, as related to critical functions and loads and site goals and objectives, so that the gap is transformed into something that can be resolved.

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| **Step 3: Refine Gap Description** |  |
| **Gap Description** | **Type of Gap** | **Resilience Attributes Impacted** | **Critical Functions or Loads Impacted by Gap** | **Refined Gap Description** |
| **Technological** | **Operational** | **Institutional** | **Redundant** | **Robust** | **Resourceful** | **Recovery** | Write the refined description of the gap informed by answer to the five “W” questions: What is the gap? Why is it a gap? Who is impacted? Where is the gap? When does it need to be resolved? |
| *Tropical Fruit Research does not have enough energy and water to sustain missions for 1 week.* | *X* | *X* |  | *X* |  |  |  | *Data analysis for agricultural research / data center plug loads* | *Critical mission Tropical Fruit Research does not meet organizational requirement to be able to sustain critical missions’ energy and water needs for a minimum of 1 week. The redundant system diesel generator that supports the critical load and function required for Tropical Fruit Research does not have enough fuel supply for a week outage because there is inadequate onsite fuel storage. This gap affects fruit researchers and analysts in the Kiwi Building Data Center and should be resolved in the short term (1-6 months).* |
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Step 4: Identify Similarities Between Gaps

In the table below, identify any similarities between the resilience gaps recorded above. Similarities may be geographic (e.g., many gaps are physically located in a similar part of the campus), related to similar deficiencies in policy (e.g., many facilities have a gap related to the lack of a continuity of operations plan), related to a common source (e.g., many gaps related to aging infrastructure), or other patterns that appear in the list of resilience gaps. Use the questions below to help identify similarities between resilience gaps.

* Is there a common source for any of the gaps?
* Are multiple gaps related to the same critical function or load?
* Are any gaps geographically co-located, such as in the same facility?
* Are critical loads with high risk distributed evenly across the site or accumulated in one area of the site?
* Are there gaps related to meeting organizational and site priorities?

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| **Step 2b: Identify Similarities Between Gaps** |
| **Gap Similarities** | **Resilience Gaps Included** |
| Are there similarities in gaps that apply to this gap, identified through the questions above? If so, list those similarities here. | List the resilience gaps that share the similarity. |
| *Facility co-location of two energy gaps* | *1) Kiwi Building Data Center plug load lack of redundant system outage tolerance. 2) Kiwi Building Germplasm storage lack of redundant system outage tolerance*  |
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