Arcata Wastewater Treatment Facility Feasibility Study

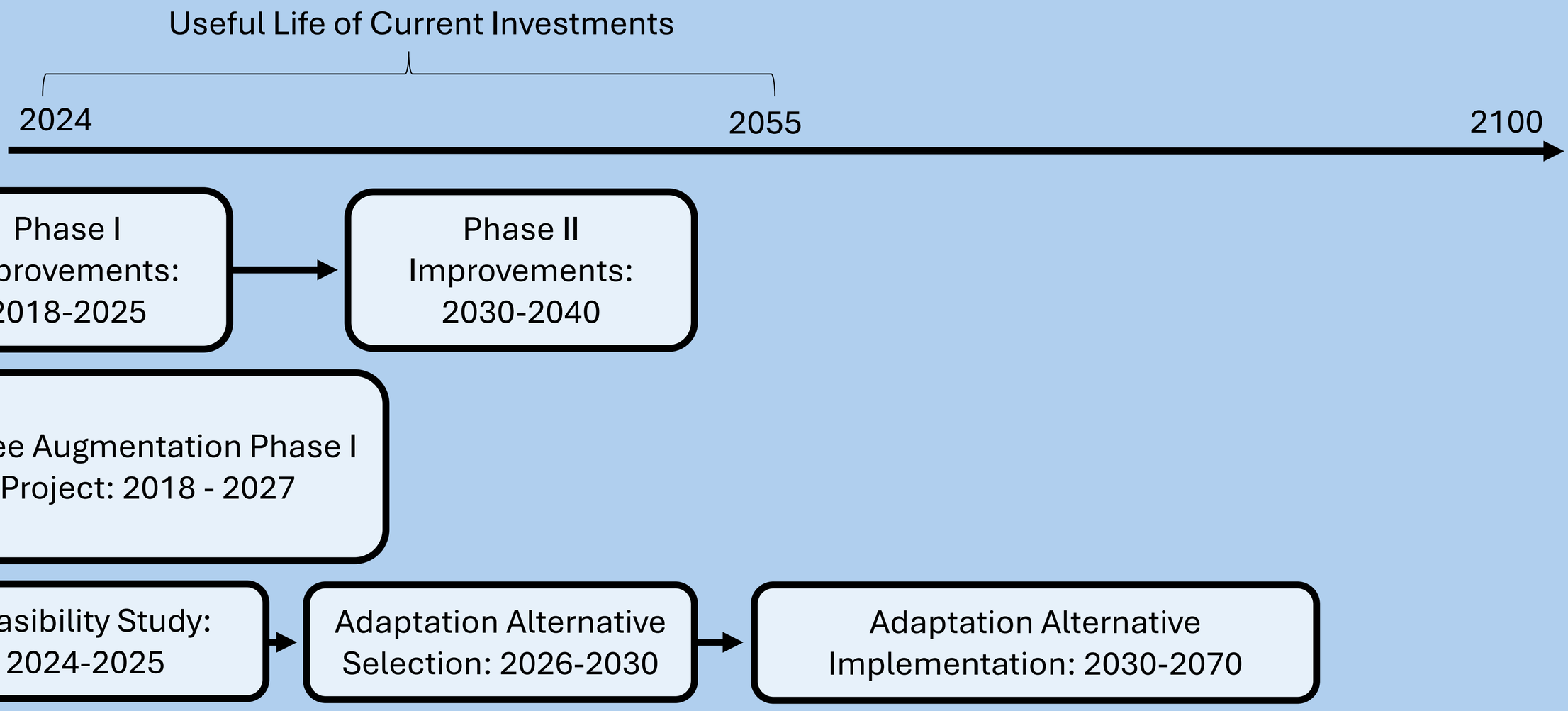
Challenge:
Previous studies, local and global climate models have suggested that the shoreline and select landward regions of the City of Arcata are susceptible to increased flooding from sea level rise and precipitation. The Arcata WWTF falls within the area identified to be suspectable to flooding, with existing critical treatment infrastructure vulnerable to damage caused by rising water levels. The California Coastal Commission issued a Coastal Development Permit for the current Phase One Improvements Project which requested that the City assess alternatives to prepare the wastewater facility for sea level rise beyond 2055.

Purpose:
Investigate and evaluate strategies for protecting, relocating, or otherwise adapting the City's wastewater facilities to maintain safety and regulatory compliance considering long-term climate change effects from flooding and other coastal hazards.

Goals:

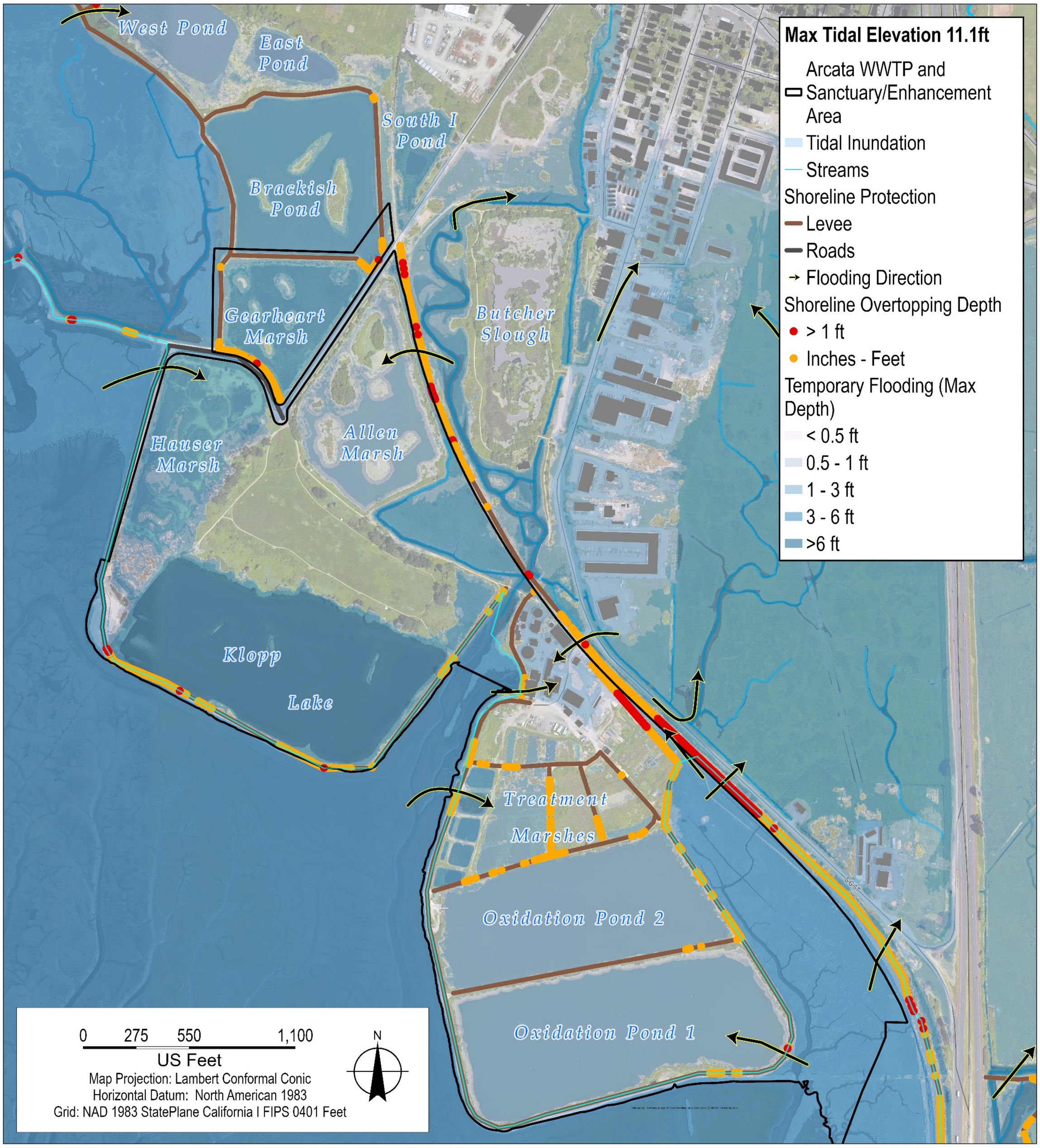
- Inform the City on how to move forward on the levee resilience improvements.
- Identify multiple top-ranking alternatives to support future decisions.

Timeline:



Funding for this project has been provided in full or in part through an agreement with the State Water Resources Control Board. The contents of this document do not necessarily reflect the views and policies of the foregoing, nor does mention of trade names or commercial products constitute endorsement or recommendation of use.

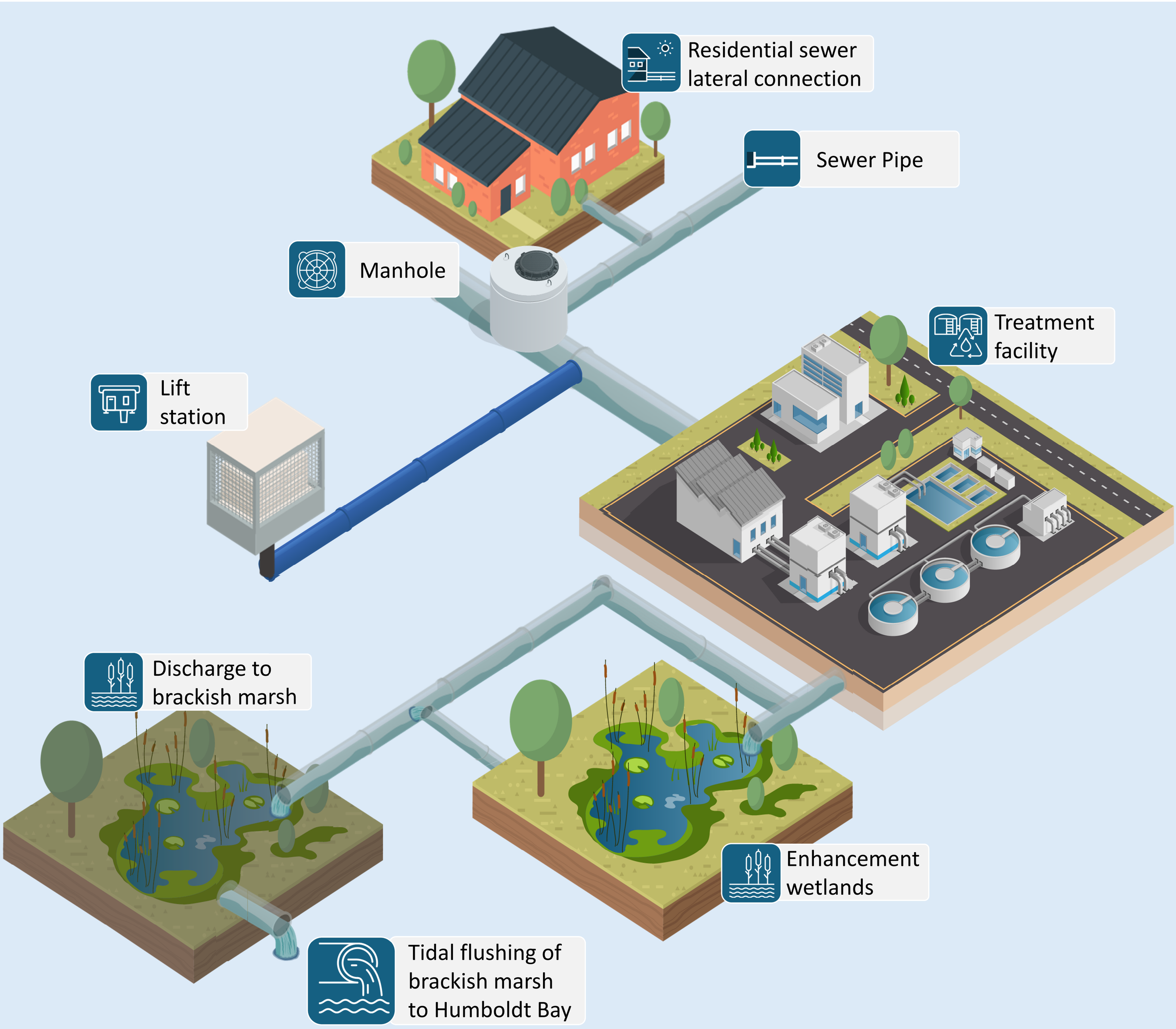
Arcata Wastewater Treatment Facility
Sea Level Rise Vulnerability



Sea Level Rise Adaptation Strategies

Funding for this project has been provided in full or in part through an agreement with the State Water Resources Control Board. The contents of this document do not necessarily reflect the views and policies of the foregoing, nor does mention of trade names or commercial products constitute endorsement or recommendation of use.

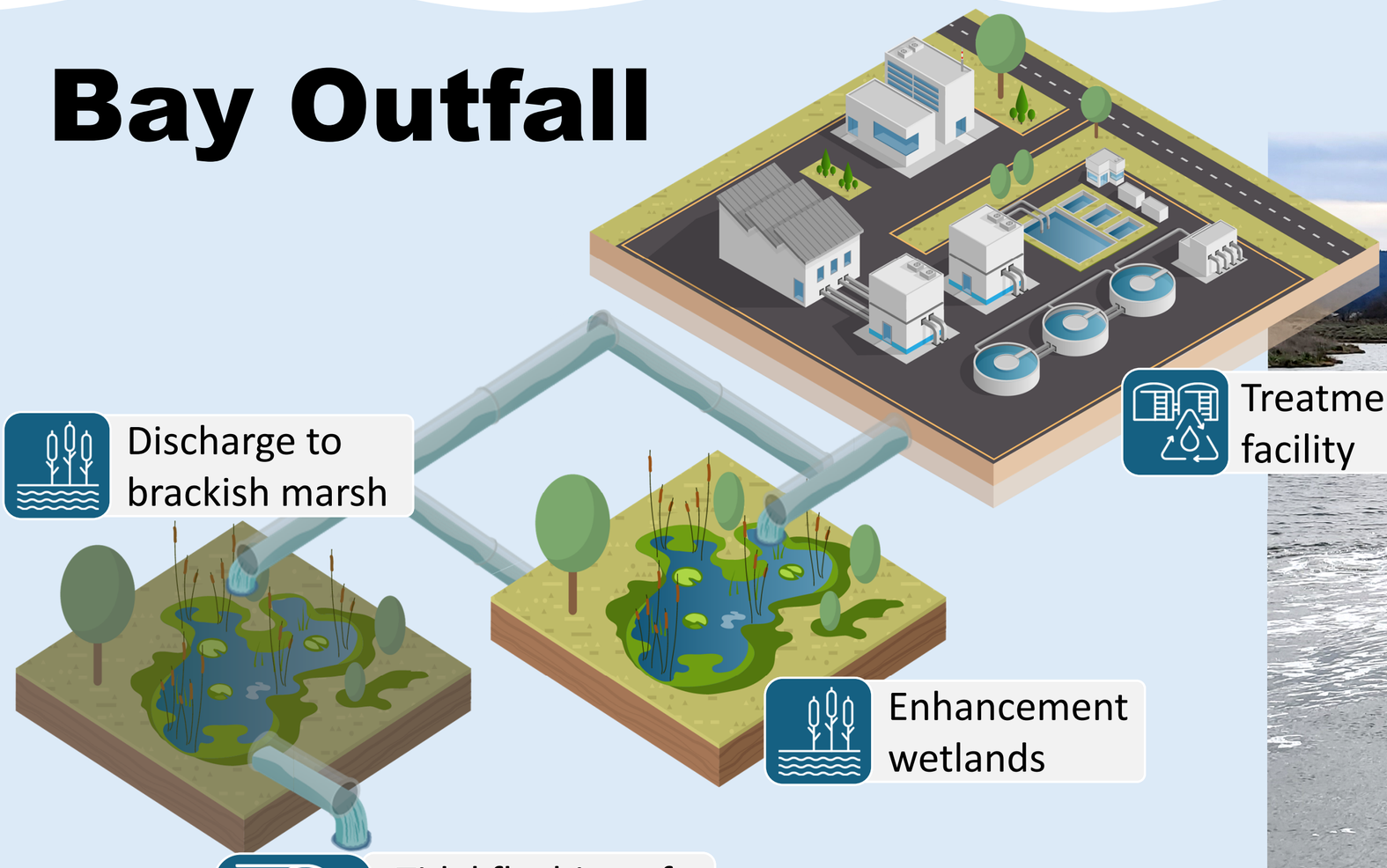
Arcata Wastewater Treatment Facility
System Overview



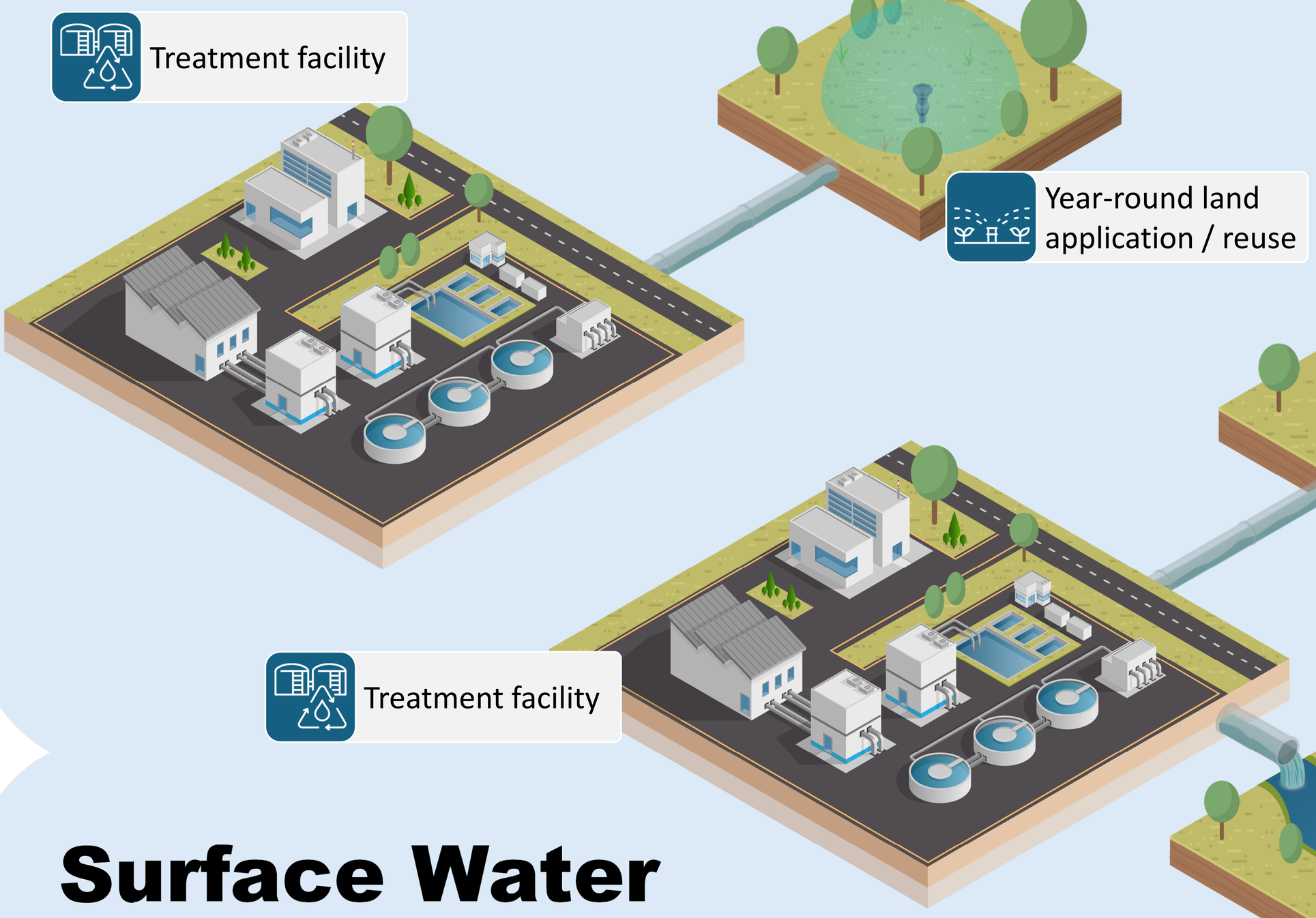
Funding for this project has been provided in full or in part through an agreement with the State Water Resources Control Board. The contents of this document do not necessarily reflect the views and policies of the foregoing, nor does mention of trade names or commercial products constitute endorsement or recommendation of use.

Wastewater Discharge Options

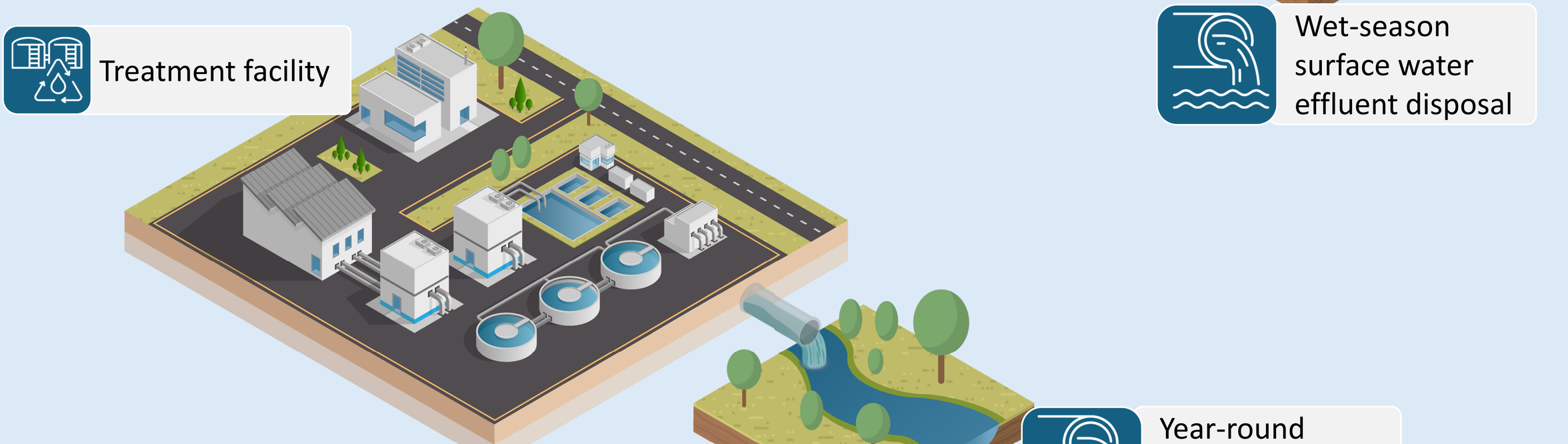
Bay Outfall



Land Application & Reuse



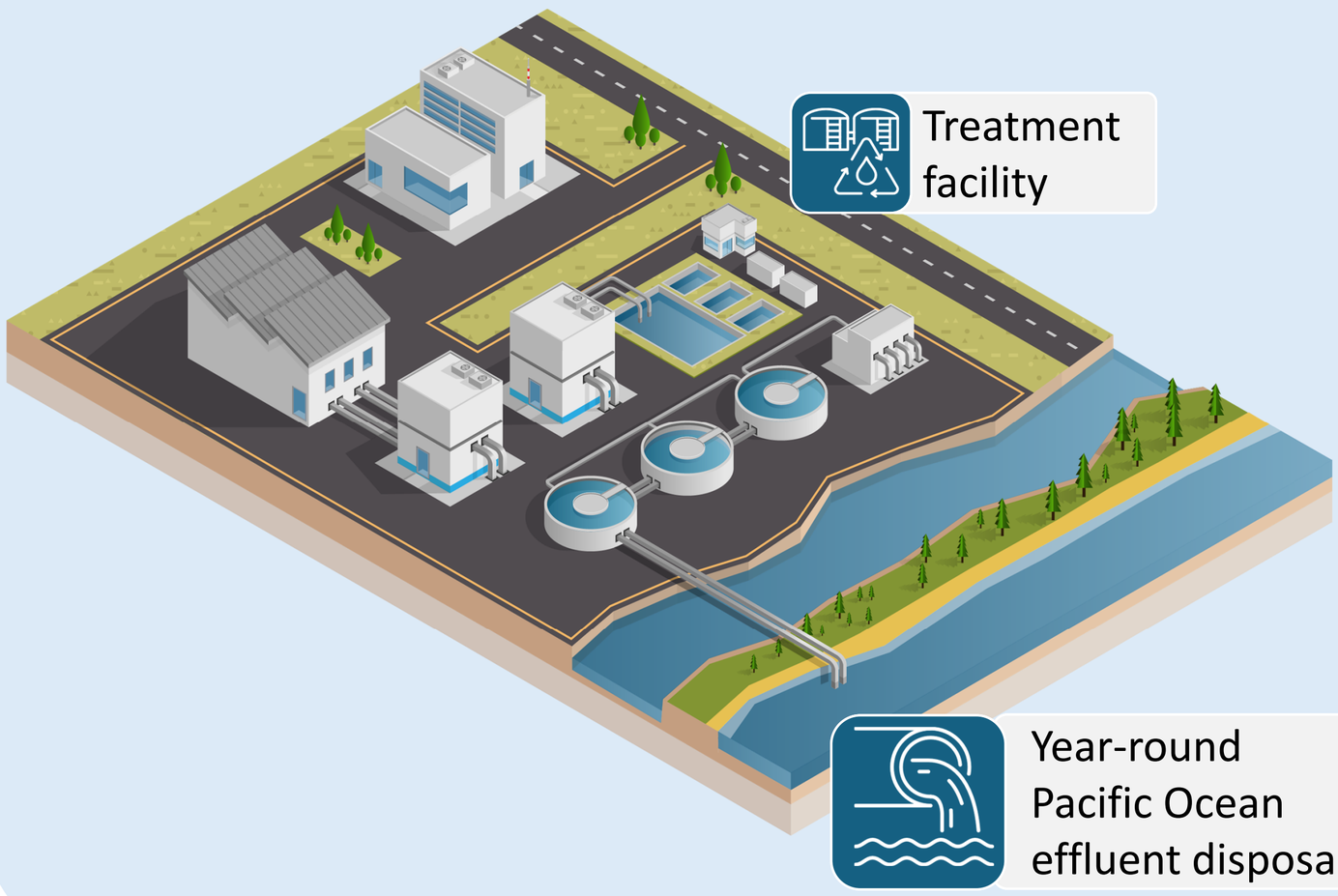
Surface Water



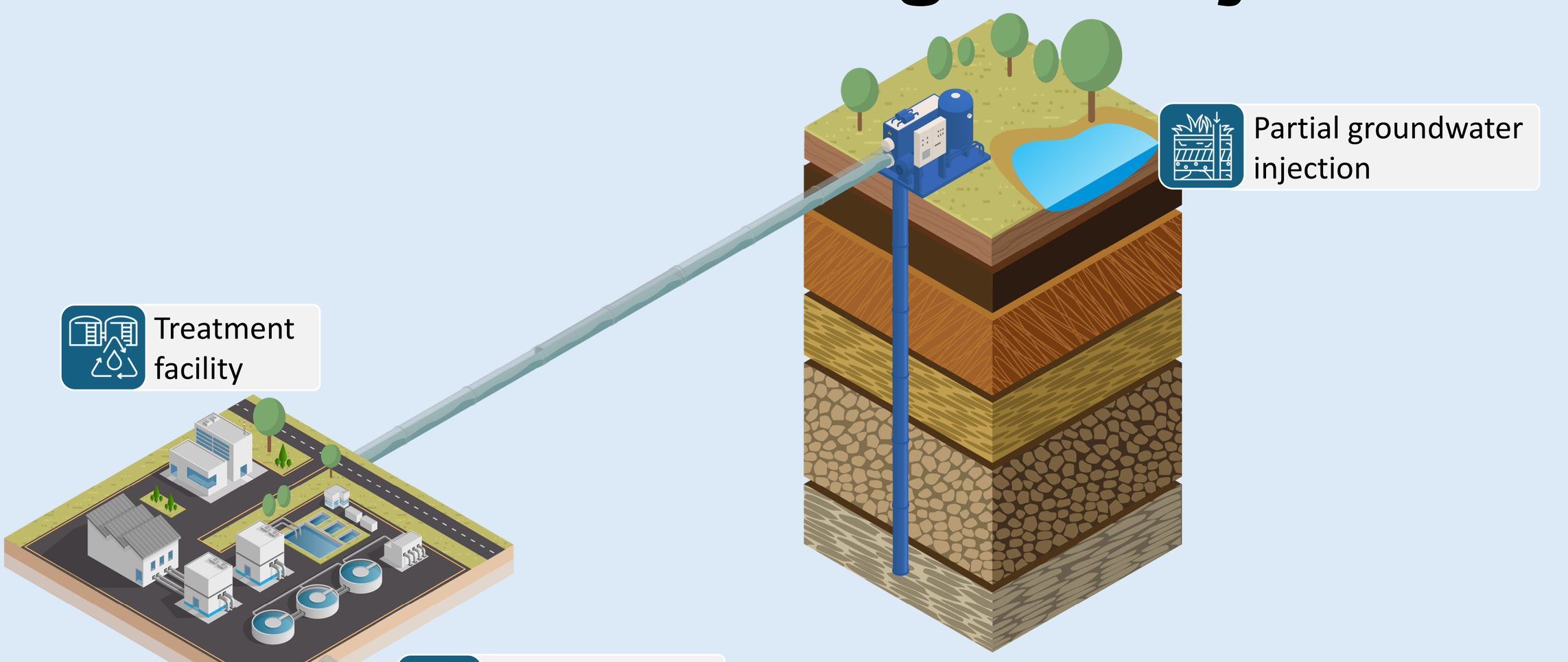
Funding for this project has been provided in full or in part through an agreement with the State Water Resources Control Board. The contents of this document do not necessarily reflect the views and policies of the foregoing, nor does mention of trade names or commercial products constitute endorsement or recommendation of use.

Wastewater Discharge Options

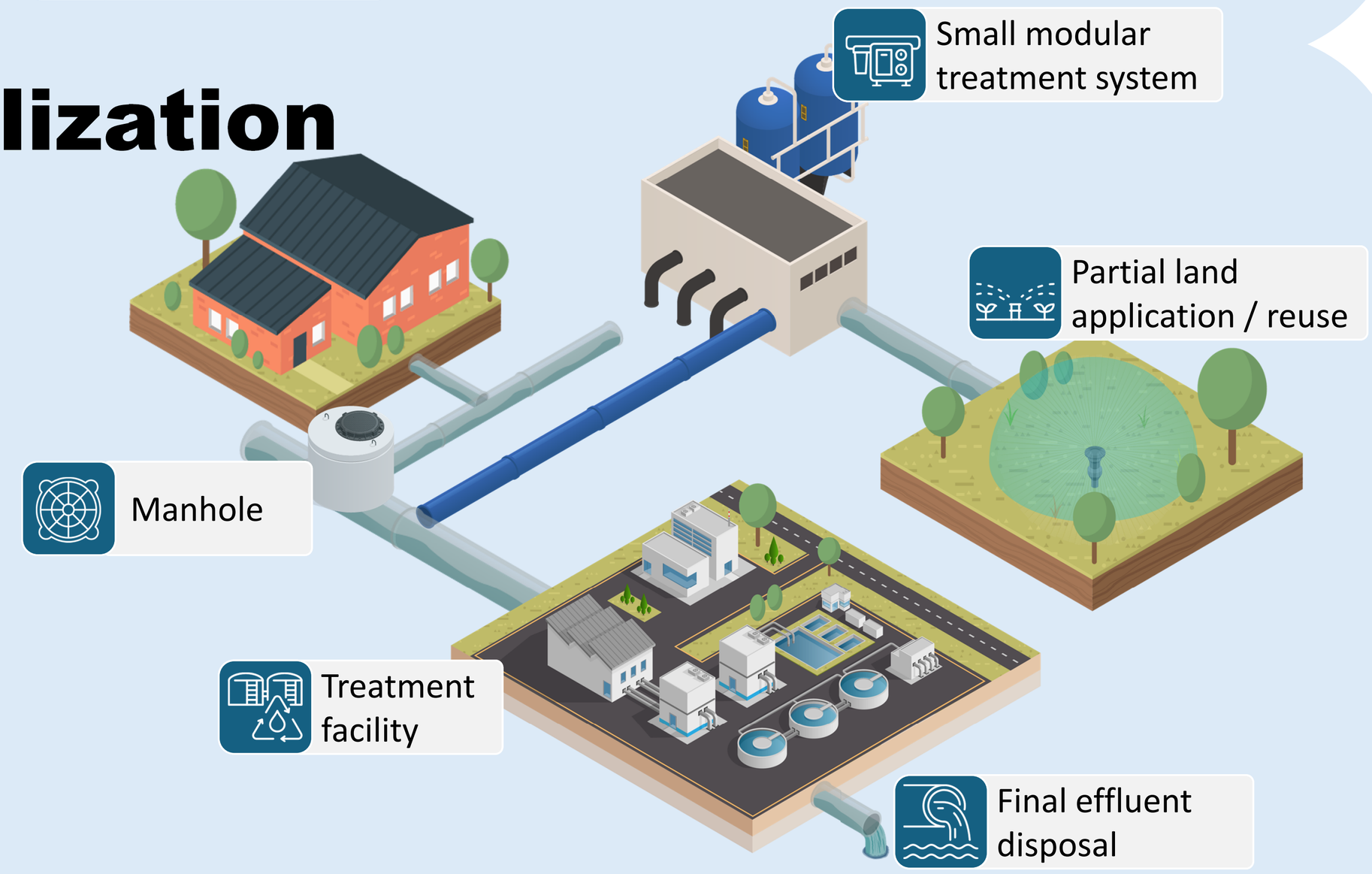
Ocean Outfall



Groundwater Discharge or Injection



Decentralization

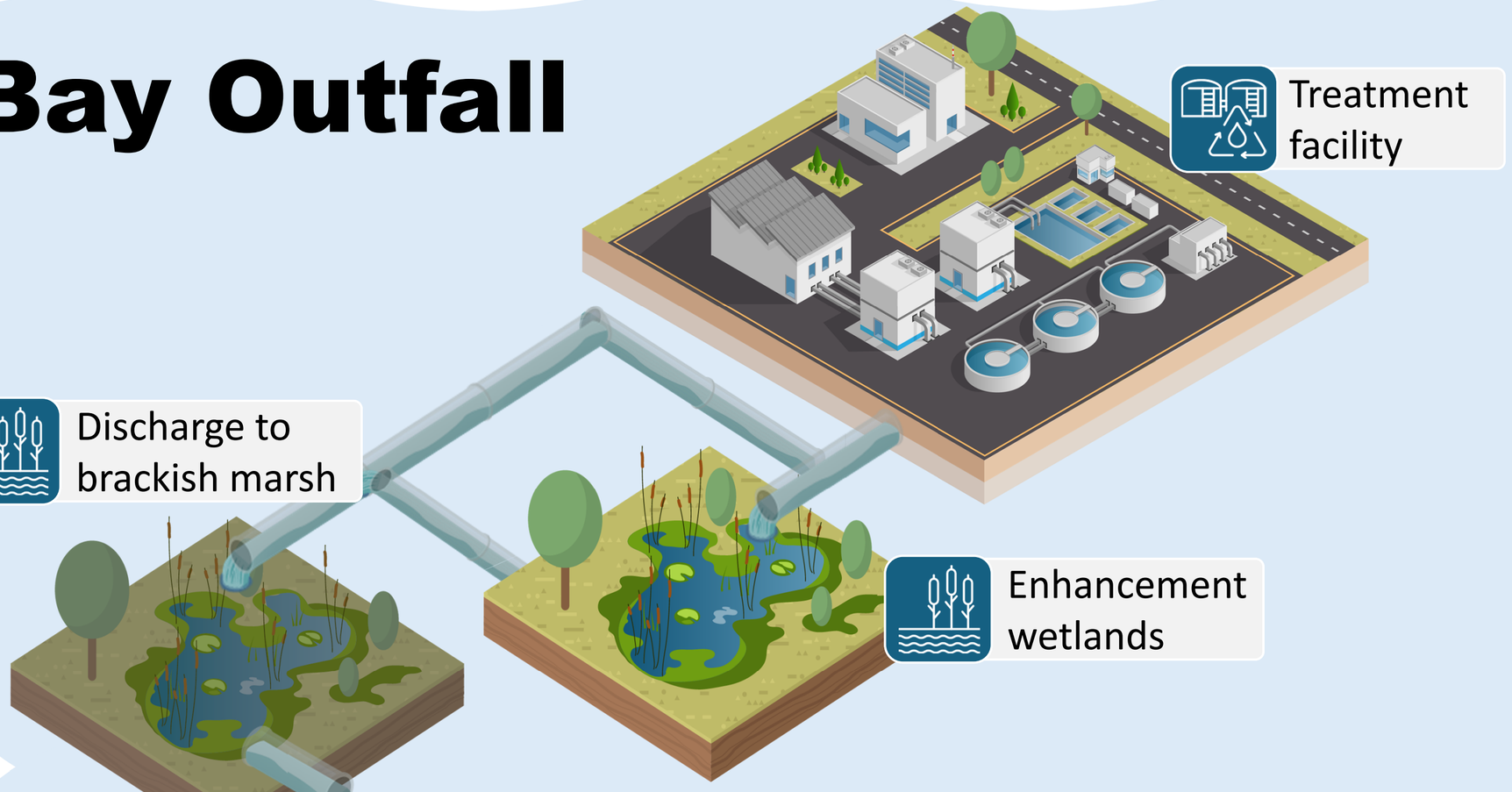


Funding for this project has been provided in full or in part through an agreement with the State Water Resources Control Board. The contents of this document do not necessarily reflect the views and policies of the foregoing, nor does mention of trade names or commercial products constitute endorsement or recommendation of use.

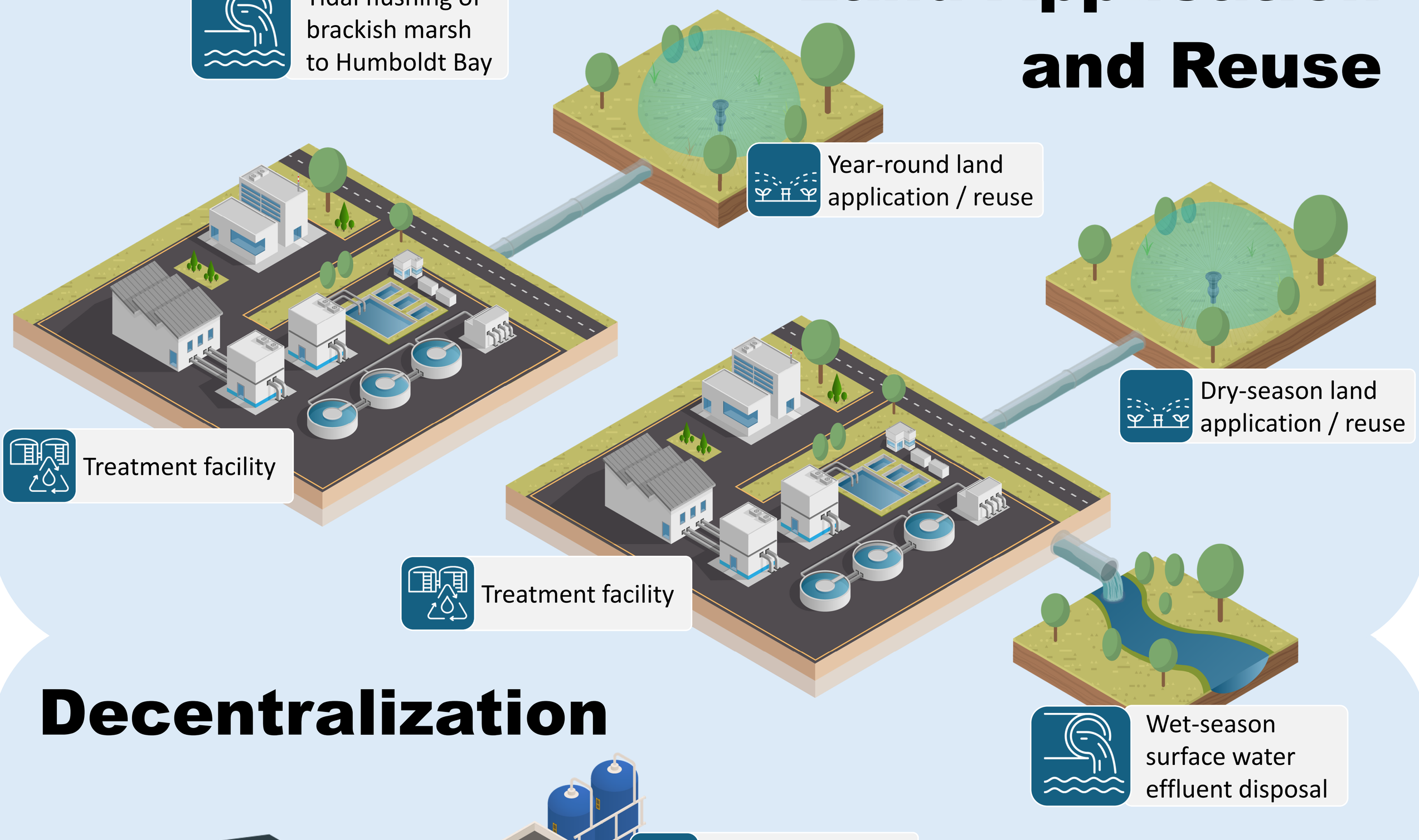
Wastewater Discharge Options

with beneficial reuse or ancillary benefits

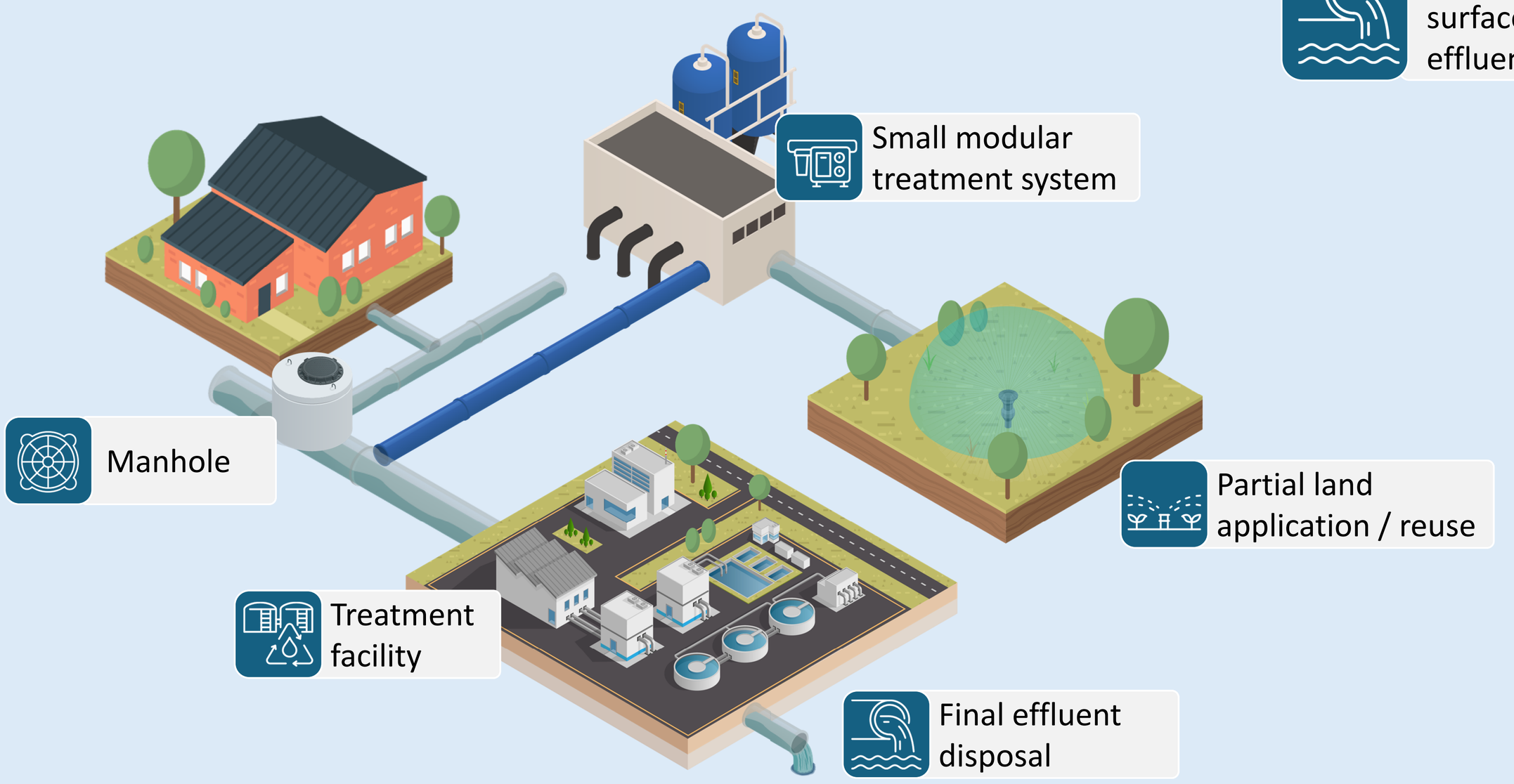
Bay Outfall



Land Application and Reuse



Decentralization



Funding for this project has been provided in full or in part through an agreement with the State Water Resources Control Board. The contents of this document do not necessarily reflect the views and policies of the foregoing, nor does mention of trade names or commercial products constitute endorsement or recommendation of use.

Decision Making Criteria

Fixed Criteria

- ✓ Meets regulatory requirements
- ✓ Maintains capacity through 2045
- ✓ Constructability
- ✓ Operability (physical operation and staffing expertise)
- ✓ Flexibility of system for future treatment concerns
- ✓ Resource efficiency and minimal environmental impact
- ✓ Cost efficient

Flexible Criteria

- ❑ Use natural systems as part of the treatment process
- ❑ Stay within existing footprint of the AWTF
- ❑ Maintain existing beneficial reuse/ancillary benefits
- ❑ Incorporate new beneficial reuse/ancillary benefits
- ❑ Increase capacity beyond 2045
- ❑ Costs
- ❑ Proactive climate change readiness

Funding for this project has been provided in full or in part through an agreement with the State Water Resources Control Board. The contents of this document do not necessarily reflect the views and policies of the foregoing, nor does mention of trade names or commercial products constitute endorsement or recommendation of use.