

BLUE PLAN-IT® ONE WATER SUITE

WATER
OUR FOCUS
OUR BUSINESS
OUR PASSION

One Decision Support Tool for One Water

The Blue Plan-it® (BPI) One Water Suite is a fully customizable water resources planning and management tool developed by Carollo Engineers, Inc. It provides a holistic and collaborative approach in the management of all water resources including surface water, groundwater, potable water, gray water, wastewater, recycled water, and storm water as "One Water" using one integrated platform.

From surface and groundwater sources, conveyance, water treatment, storage and banking, to distribution, collection, wastewater treatment, water reuse, advanced water treatment, disposal, and stormwater management, the Blue Plan-it® One Water Suite can model all water infrastructure components holistically. These components can be organized in a hierarchical structure to provide a whole system overview or in detailed breakdowns of any individual subsystem. Multiple views, schematic or geographical, can be developed to meet specific needs for different audiences. Once a process flow diagram is completed, the tool automatically tracks water and mass balance for the whole system. Moreover, this decision support tool empowers the users to perform what-if analysis, sensitivity analysis, Monte Carlo simulation, and multi objective optimization in one platform.

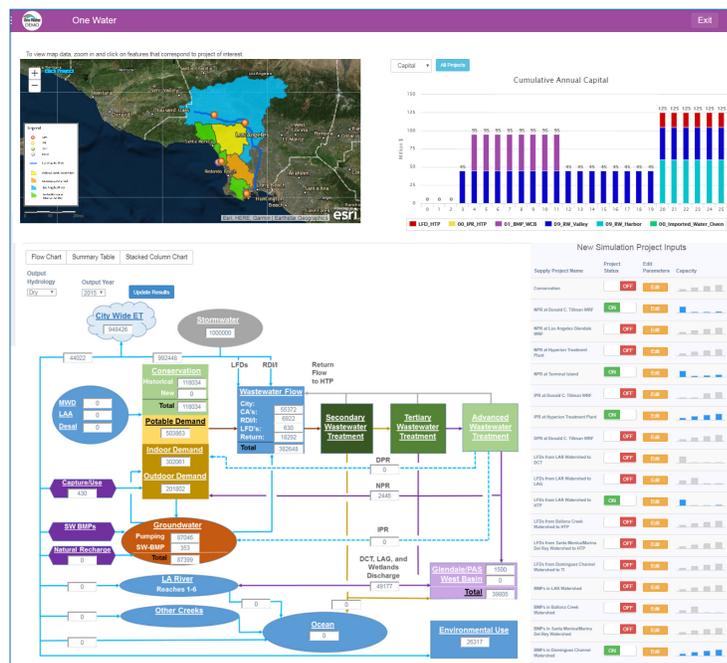
Typical Applications

The One Water Suite is designed for master planners, engineers, water utilities, and agencies to perform a wide range of water resources management studies for a whole or partial water system. This tool could be beneficial in:

- Delivering a dynamic integrated water resource master plan. It can establish a whole system water balance to quantify each major water stream based on historical data, flow and demand projections, etc.
- Evaluating alternative planning scenarios (e.g., aggressive versus moderate growth) productively for various planning conditions (e.g., drought or wet weather, current and future) using the built-in **Scenario Manager**.
- Determining the sizing of future water facilities, pipelines, pump stations, etc., and associated costs for proposed capital improvement plan (CIP) projects.

- Prioritizing proposed projects using the **"Dynamical CIP"** planner to meet multiple planning objectives (e.g., demands, sustainability or water conservation goals, fiscal constraints, etc.).

- Providing **water portfolio summaries** (e.g., fresh water intake, groundwater pumping, achievements of water conservation, non-portable reuse, direct and indirect potable reuse, amount of water banked or waste discharged, etc.).
- Simulating precipitation, instream flow, water withdrawal, infiltration, evaporation, reservoir operation, etc. for **watershed management**.
- Determining design and operational strategies, (e.g., daily amount of pollutant that can be discharged and still meet the Total Maximum Daily Load (**TMDL**) or other water quality standards of given contaminants).
- Modeling water uses for commercial, residential and industrial systems, centralized versus distributed development, and low-impact development.



Blue Plan-it® One Water Suite was used for the City of Los Angeles One Water LA 2040 project.

Integration with Hydraulic Models

This tool can be used in conjunction or integrated seamlessly with hydraulic models such as EPA Net, InfoWater, CityWater web app, Optimatics, Storm Water Management Model (SWMM), etc. It can be used to provide guidance on scenarios requiring in depth further evaluation using hydraulic models and by summarizing infrastructure improvement costs generated from hydraulic models. It also can be used to perform outage analysis of a system to determine planning and operation strategies in response to one or more infrastructure components (e.g., pump stations, treatment plants, pipelines, reservoirs) being out of service.

Water Quality Modeling

One strength of Blue Plan-it® is its unique capability in distribution system water quality modeling. From corrosion and stability assessment associated with blending of multiple surface and groundwater sources in a system, to simulation of chlorine residuals and disinfection byproducts formation based on water age and quality, to blending and treatment of inorganic and organic contaminants (e.g., nitrate, arsenic, fluoride, selenium, salinity, PFAS, etc.), Blue Plan-it® does it all in one platform. Its built-in database and algorithms allows users to evaluate the impacts of chemical additions and treatment processes on water quality.

Customizable Dashboards

One key feature of BPI is its fully customizable dashboards. Connecting with Power BI, Tableau, and/or Excel, users are provided with a dashboard customized to meet individual needs and preferences. With its internal and external databases, the One Water Suite provides access to historical flow, demand, water quality, and cost data as well as future projections and modeling results. The dashboards help users to conduct virtual experimentation of their systems and visualize their data for unlimited planning scenarios.

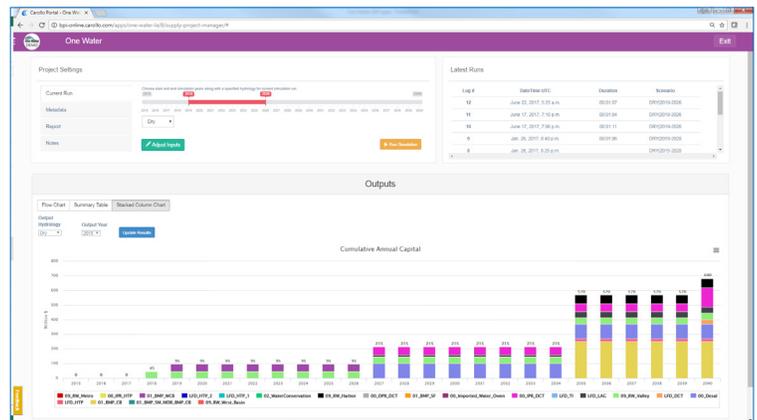
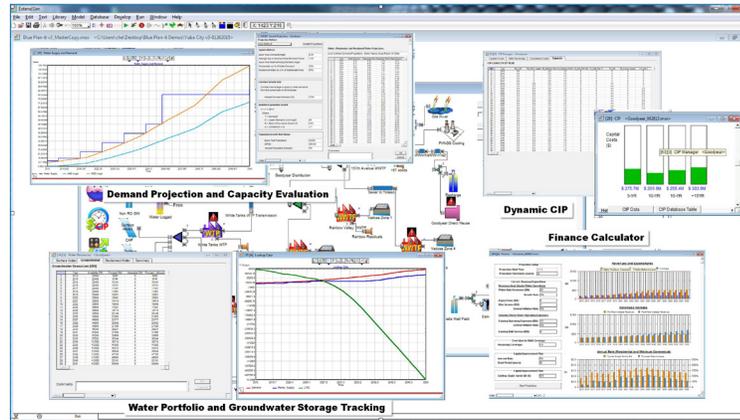


BLUE PLAN-IT®
DECISION SUPPORT SYSTEM

BLUE PLAN-IT®
WEB APP

Real Time Decision Support

In conclusion, the Blue Plan-it® One Water Suite can be customized to integrate water resources planning, water quality and treatment, cost estimates, CIP planning, triple bottom line analysis, and financial analysis all in one model. Decisions on how to best manage "One Water" can be made in an effective and interactive manner (e.g., real time decision support stakeholder workshops and interactive public outreach).



"Finally, an integrated master plan that resembles the 21st century! This tool will truly link, real-time, various City departmental data through a central hub and allow for scenario development and dashboard results. Thanks for getting us out of the stone ages represented by the old style static plans that become outdated 6 months after they are printed. Blue Plan-it® is revolutionizing planning that provides for maximum efficiency and the ability to always have an updated plan at your fingertips."

— Mark Holmes

Water Resources Director, City of Goodyear