

BUILDING A WORLD OF DIFFERENCE

**ENERGY TECHNOLOGY AND SUSTAINABLE
BUILDING CONSTRUCTION AND DESIGN
ANALYSIS SERVICES**
CITY OF CHULA VISTA, CA

BLACK & VEATCH

8 July 2015



BLACK & VEATCH
Building a world of difference.®

BLACK & VEATCH IS A GLOBAL LEADER IN ENGINEERING DESIGN AND CONSTRUCTION



110+ offices
worldwide

10,000+
global
workforce

Founded
1915

\$3.0B
2014 revenue

Projects
100
in
countries

7000
active projects
at any given time

Projects
6
on
continents

Delivering *Critical Human Infrastructure™* Solutions for
100 years



SOLVING THE WORLD'S COMPLEX CHALLENGES IN OUR CORE MARKETS

ENERGY



WATER



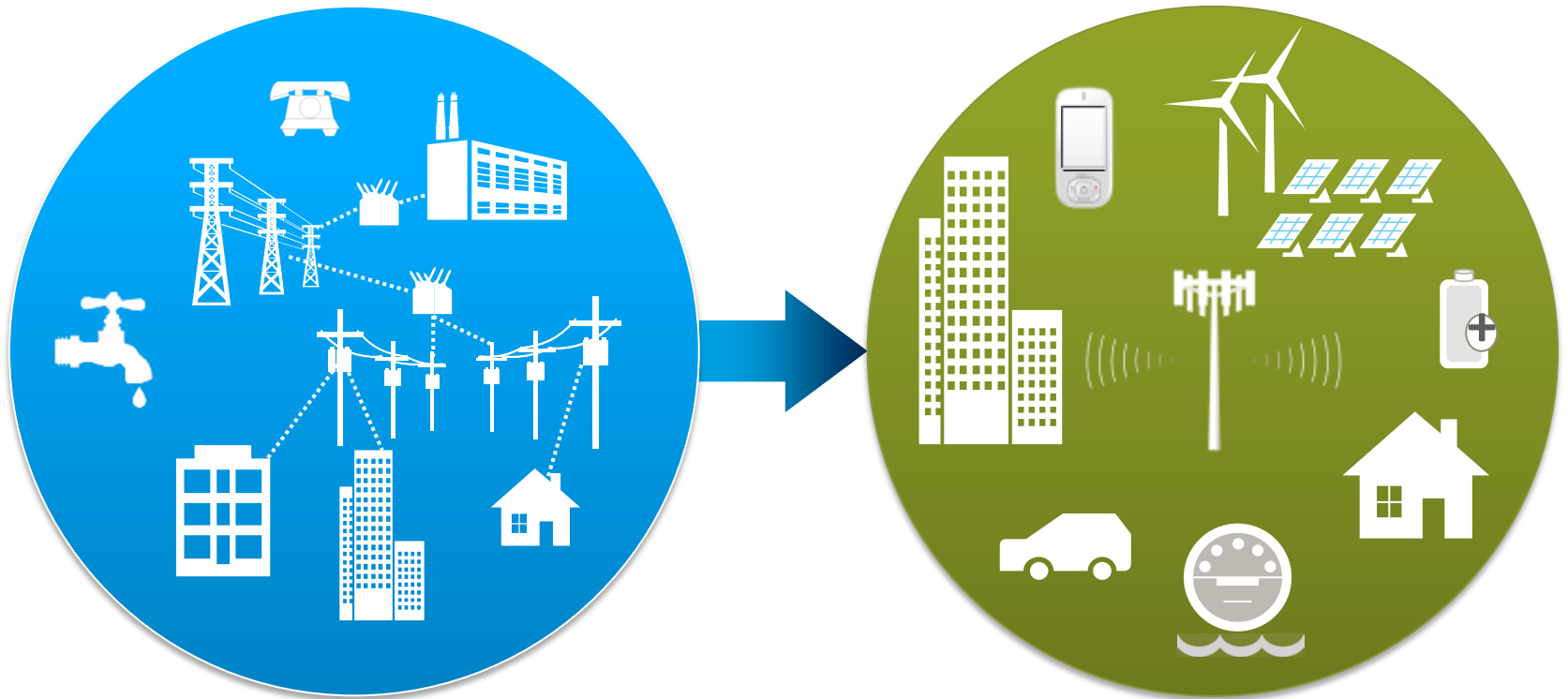
TELECOMMUNICATIONS



GOVERNMENT

Leading infrastructure solutions and the scale to support programs of all sizes

WE ARE EXTENDING OUR LEADERSHIP TO THE NEW INTELLIGENT, DISTRIBUTED INFRASTRUCTURE FRONTIER



The *Internet of Everything* is enabling connectivity and coordination across distributed systems

END TO END SMART COMMUNITY SERVICES



B&V SMART CITIES INTEGRATION

SCALABLE | VENDOR NEUTRAL | GEOGRAPHICALLY DISTRIBUTED

Engineering	Project Management	Implementation	Commissioning & Integration
<ul style="list-style-type: none"> Energy Water & Wastewater Telecommunications Security Master Planning 	<ul style="list-style-type: none"> Schedules / Costs Standards and Documentation Ecosystem Partners and 3rd Party Vendors 	<ul style="list-style-type: none"> Permitting / Environmental Construction Management Utility Interconnection Safety 	<ul style="list-style-type: none"> ASSET360™ Analytics and Dashboards Bandwidth and SLA Verification



COMPLEX CITY CHALLENGES REQUIRE INTEGRATED PLANNING

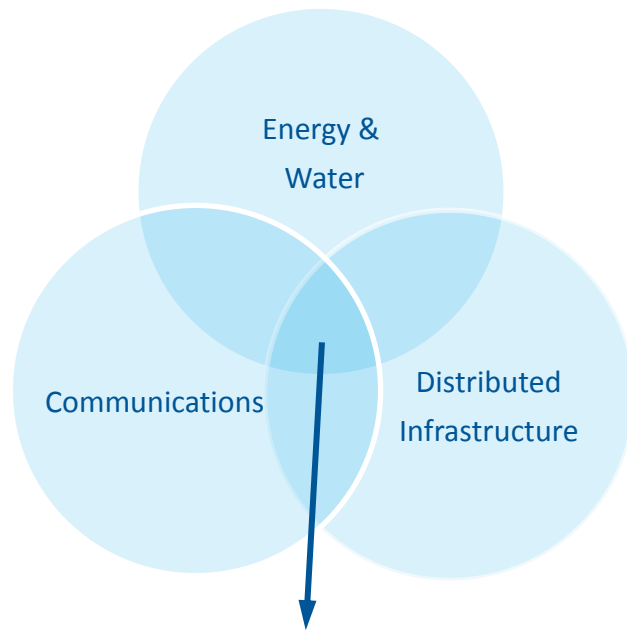


- Need for higher levels of resiliency
- Regulation & compliance
- Aging infrastructure
- ROI / new revenue streams
- Public safety
- Urbanization
- Climate action plans
- Incorporate new technologies
- Connected smart infrastructure
- Data security
- Citizen engagement

We are creating a future centered on the technology revolution

BLACK & VEATCH BAYFRONT RFP APPROACH

Our Smart Community methodology is focused on the intersection of these critical areas – it requires a partner like B&V that can integrate all together



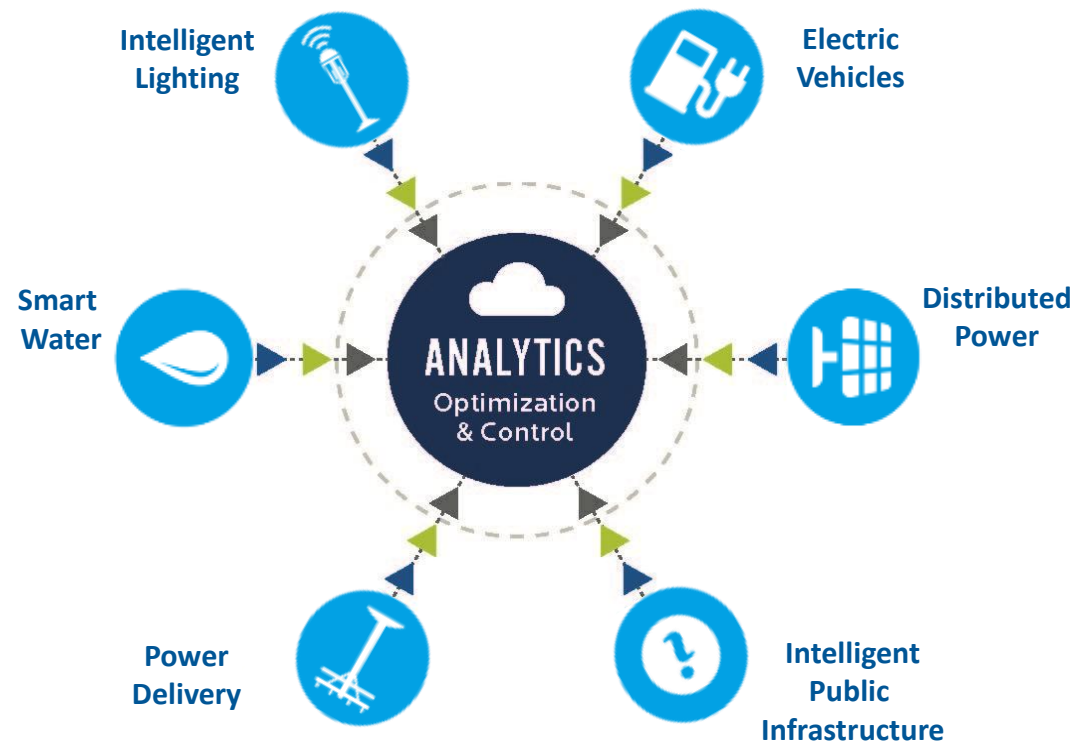
Intersection = Smart Community = Chula Vista Bayfront

We approached the Bayfront RFP as the foundation for future City-wide smart city applications



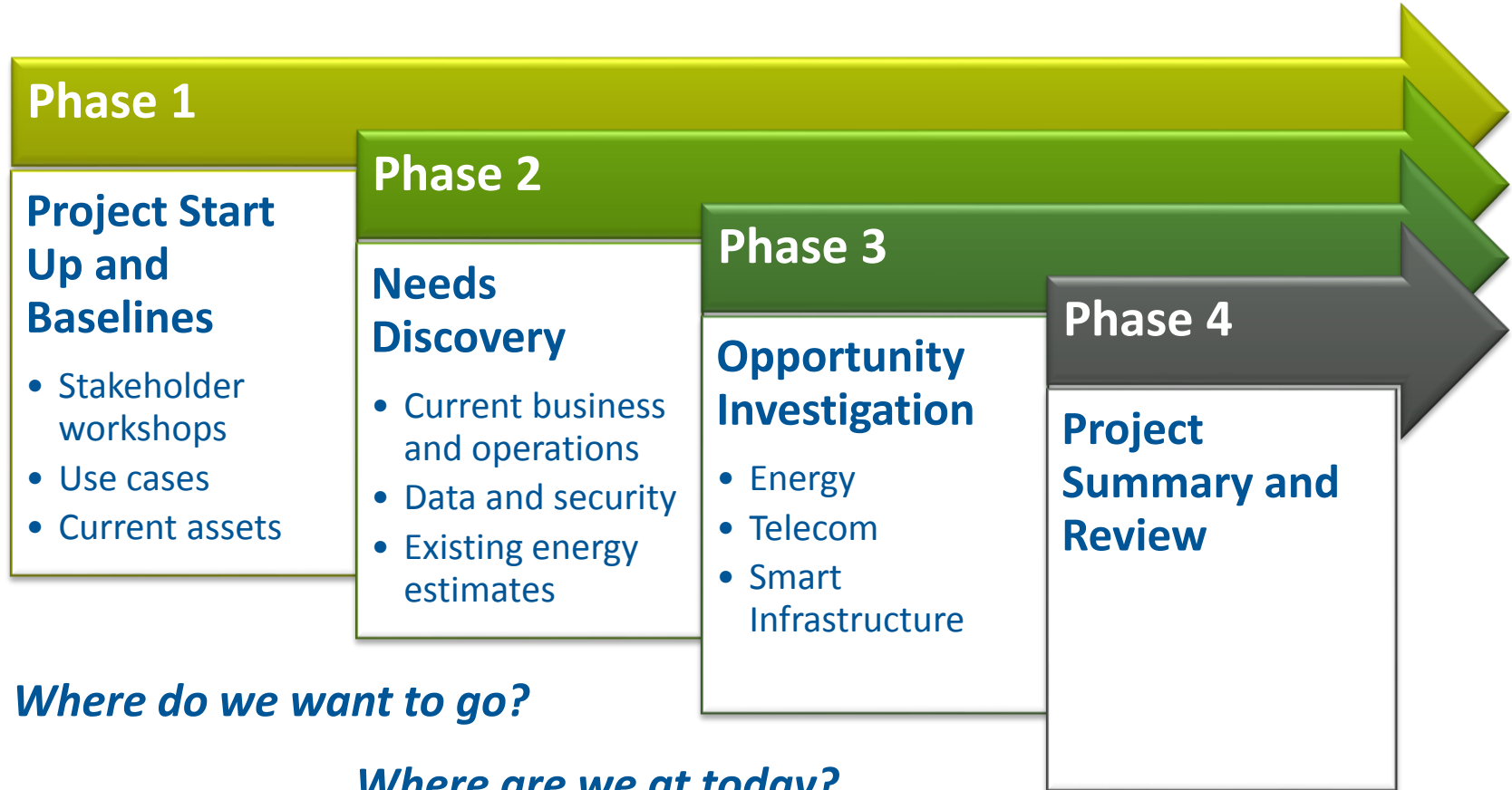
CITIES BENEFIT FROM SYNERGIES THAT CULTIVATE SYSTEM-WIDE INTELLIGENCE

- Ordinary items are becoming extraordinary
- Connectivity facilitates convergence
- As data layers interact they become more powerful
- Enabling multi-dimensional awareness, smart infrastructure



Requires the ability to access, manage, analyze and act upon huge volumes of data

BAYFRONT PROJECT SCHEDULE AND MILESTONES



Where do we want to go?

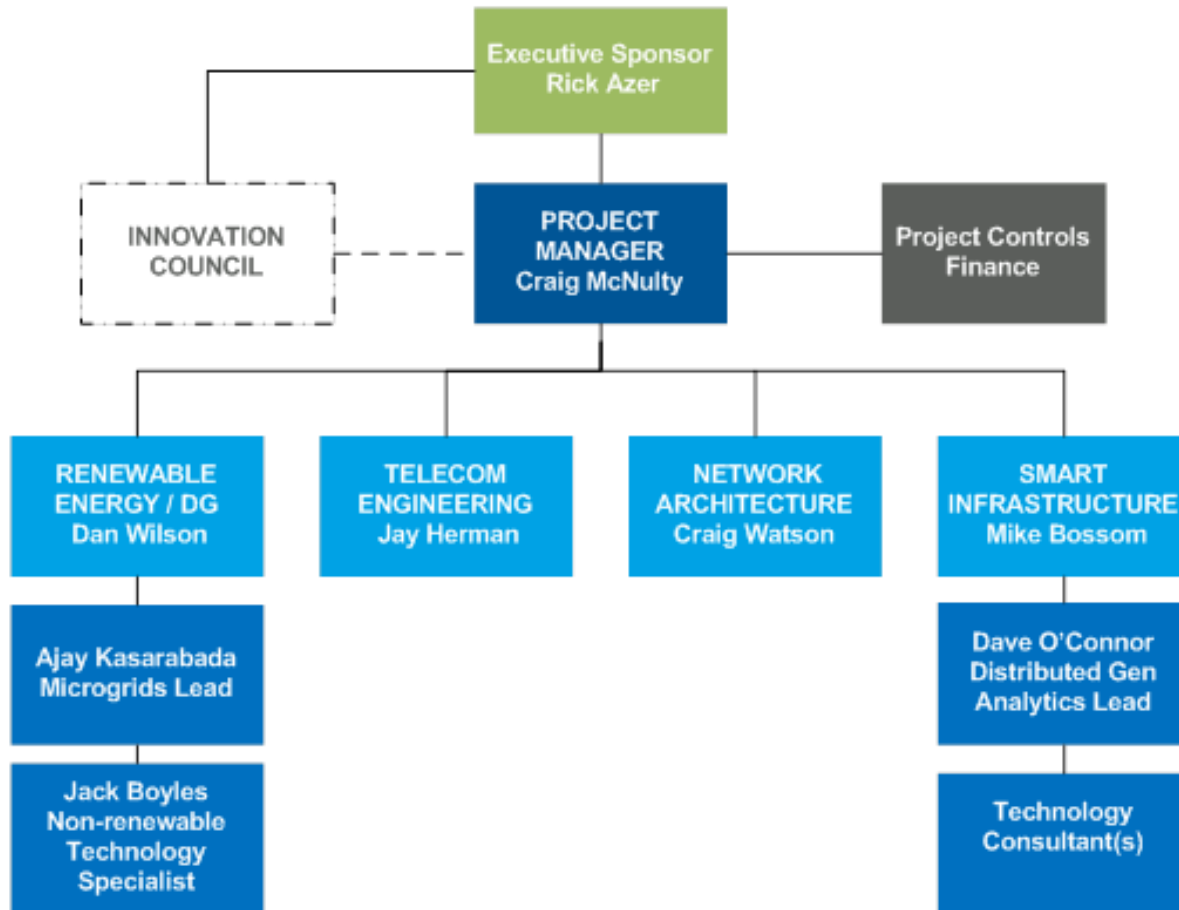
Where are we at today?

What can we implement to get there?

Black & Veatch has a cohesive plan to apply proven methodology to develop a unique, contextual solution




PROJECT TEAM

BLACK & VEATCH PROJECT ORG CHART
Chula Vista Energy Efficiency and Smart Infrastructure



INNOVATION COUNCIL PARTNERS



Partner	Key Strengths
	<ul style="list-style-type: none"> • San Diego based HQ and global leader in wireless with an end-to-end investment IoT technologies • Qualcomm’s strategies around interoperability, edge processing, and scalability will help Chula Vista avoid locking into proprietary, single source solutions.
	<ul style="list-style-type: none"> • OSIsoft data infrastructure connects sensors, operations and people with local projects at SDG&E, UCSD, the USN ESTCP, SD Airport, and the Port of San Diego • OSI’s skilled at combining data to make decisions and/or be made available in an open data platform key for Chula Vista
	<ul style="list-style-type: none"> • Cisco Smart+Connected Cities approach provides Advisory and Intelligent Networking solutions required to connect disparate city systems, and provide urban services via an open platform • Cisco has implemented similar advisory, technology and vendor neutral collaborative frameworks and “smart/innovation alliances” in Dallas, Chicago and Europe.

Building a **world** of difference.®

Together



BLACK & VEATCH

www.bv.com