

REQUEST FOR COUNCIL ACTION CITY OF SAN DIEGO				CERTIFICATE NUMBER (FOR COMPTROLLER'S USE ONLY)	
TO: CITY COUNCIL		FROM (ORIGINATING DEPARTMENT): Public Utilities		DATE: 3/6/2015	
SUBJECT: San Vicente Pumped Storage Hydroelectric Project - Informational Report					
PRIMARY CONTACT (NAME, PHONE): Robert Mulvey, 858-292-6418, MS 901			SECONDARY CONTACT (NAME, PHONE): Lan Wiborg, 619-758-2341, MS 45A		
COMPLETE FOR ACCOUNTING PURPOSES					
FUND					
FUNCTIONAL AREA					
COST CENTER					
GENERAL LEDGER ACCT					
WBS OR INTERNAL ORDER					
CAPITAL PROJECT No.					
AMOUNT	0.00	0.00	0.00	0.00	0.00
FUND					
FUNCTIONAL AREA					
COST CENTER					
GENERAL LEDGER ACCT					
WBS OR INTERNAL ORDER					
CAPITAL PROJECT No.					
AMOUNT	0.00	0.00	0.00	0.00	0.00
COST SUMMARY (IF APPLICABLE):					
ROUTING AND APPROVALS					
CONTRIBUTORS/REVIEWERS:		APPROVING AUTHORITY	APPROVAL SIGNATURE	DATE SIGNED	
Liaison Office		ORIG DEPT.	Mulvey, Robert	03/06/2015	
		CFO			
		DEPUTY CHIEF			
		COO			
		CITY ATTORNEY	Palmucci, Ray	03/11/2015	
		COUNCIL PRESIDENTS OFFICE			
PREPARATION OF:	<input type="checkbox"/> RESOLUTIONS	<input type="checkbox"/> ORDINANCE(S)	<input type="checkbox"/> AGREEMENT(S)	<input type="checkbox"/> DEED(S)	
This is an informational item only					
STAFF RECOMMENDATIONS: Receive and comment on this briefing; grant conceptual approval of Project.					
SPECIAL CONDITIONS (REFER TO A.R. 3.20 FOR INFORMATION ON COMPLETING THIS SECTION)					
COUNCIL DISTRICT(S):	Citywide				
COMMUNITY AREA(S):	Citywide				
ENVIRONMENTAL IMPACT:	N/A				
CITY CLERK	N/A				

INSTRUCTIONS:	
---------------	--

**COUNCIL ACTION
EXECUTIVE SUMMARY SHEET
CITY OF SAN DIEGO**

DATE: 3/6/2015

ORIGINATING DEPARTMENT: Public Utilities

SUBJECT: San Vicente Pumped Storage Hydroelectric Project - Informational Report

COUNCIL DISTRICT(S): Citywide

CONTACT/PHONE NUMBER: Robert Mulvey/858-292-6418, MS 901

DESCRIPTIVE SUMMARY OF ITEM:

At the March 25, 2015 Environment Committee meeting, the Public Utilities Department (Department) will present the history, objectives, strategies, and milestones of the proposed San Vicente Pumped Storage Hydroelectric Project for conceptual approval.

STAFF RECOMMENDATION:

Receive and comment on this briefing; grant conceptual approval of Project.

EXECUTIVE SUMMARY OF ITEM BACKGROUND:

Conceptual approval of the San Vicente Pumped Storage Hydroelectric Project. The City is teaming with the San Diego County Water Authority (CWA) to conduct an in-depth study of the feasibility of a multi-year renewable energy project at the City owned and operated San Vicente Reservoir. The objective is to identify opportunities to use existing City assets to generate revenue in the areas of energy arbitrage, ancillary services (e.g., spinning reserve) and storage (i.e., capacity value) in order to offset the rising costs of energy and imported water. The study will also evaluate the potential contribution of a large-scale pumped storage project toward meeting the City's Climate Action Goals.

FISCAL CONSIDERATIONS:

Not applicable at this time. Any future contracts, collaborative agreements with CWA, or expenditure of funds related to the Project will require council approval.

EQUAL OPPORTUNITY CONTRACTING INFORMATION (IF APPLICABLE): N/A

PREVIOUS COUNCIL and/or COMMITTEE ACTION: N/A

COMMUNITY PARTICIPATION AND PUBLIC OUTREACH EFFORTS:

Not applicable at this time. Any future community participation and public outreach efforts on the Project will be performed in collaboration with CWA and be presented to council for approval in advance of such activities.

KEY STAKEHOLDERS AND PROJECTED IMPACTS:

Project stakeholders include the CWA, regulated utilities (e.g., SDG&E, Southern California Edison), Barona Band of Mission Indians (a potential stakeholder), California Independent System Operator, California Public Utilities Commission, County of San Diego, environmental organizations (e.g. Sierra Club, NRDC), Federal Energy Regulatory Commission, renewable energy advocates, State of California Lands Commission, U.S. Fish and Wildlife Services.

Mulvey, Robert
Originating Department

Deputy Chief/Chief Operating Officer



Briefing for the SD City Council Committee on the Environment

San Vicente Pumped Storage Project

Robert Mulvey, Assistant Public Utilities Director

Lan Wiborg, Acting Program Manager

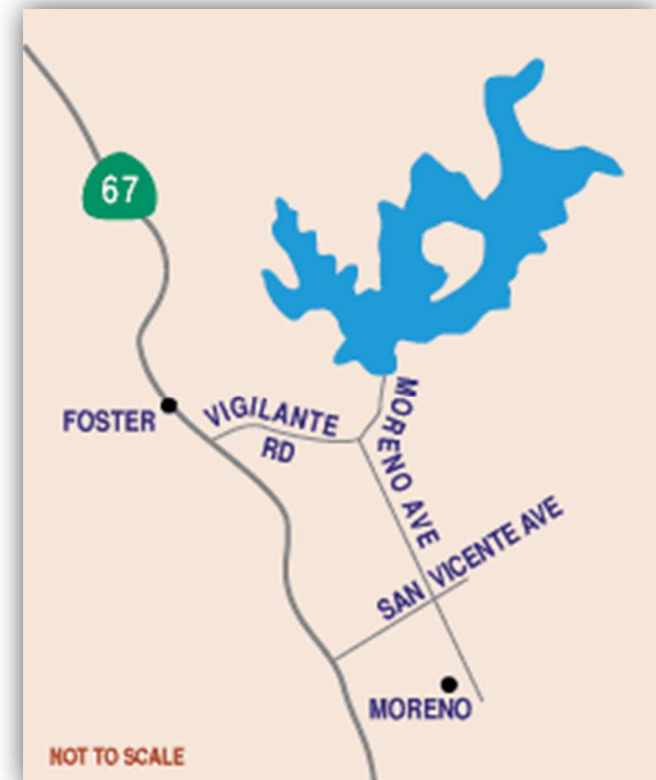
March 2015





SVPS Project Overview

- SVPS Project Purpose
- Site Description
- Current Status
- Next Steps



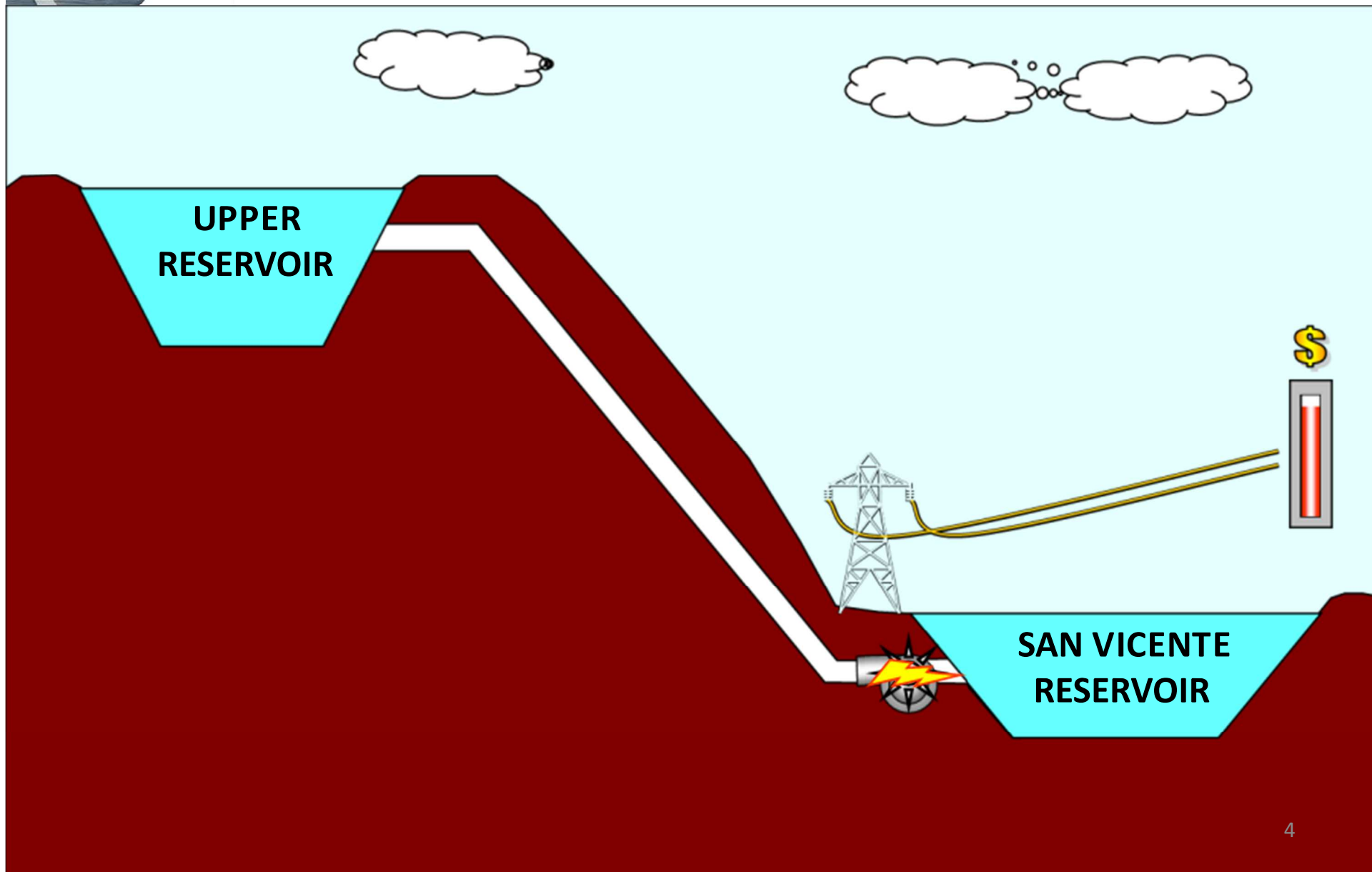


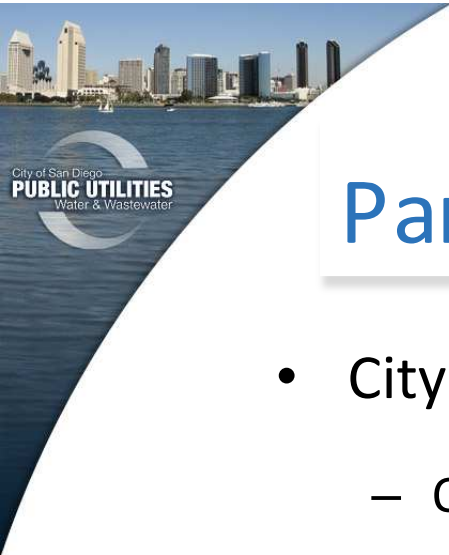
San Vicente Pumped Storage Project

- Up to 500 MW hydroelectric project
- Similar in scale to San Diego's share of capacity lost at San Onofre Nuclear Generating Station
- Has potential to generate significant revenue to offset future water rates



San Vicente Pumped Storage Project

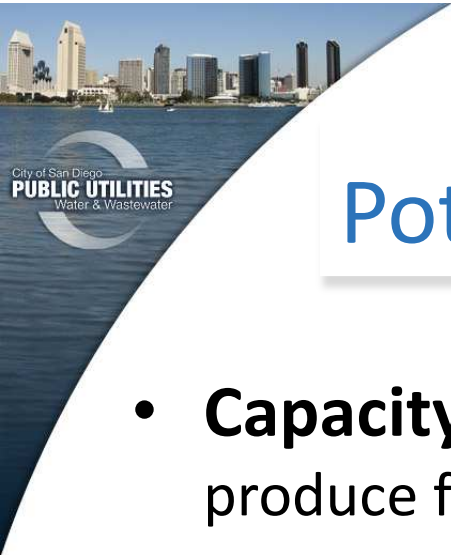




Partnership

- City of San Diego
 - Owner of San Vicente Reservoir and Dam
 - Owns 90,000 acre feet of storage (1/3 of capacity)
- SD County Water Authority
 - Owns 152,000 acre feet of storage (2/3 of capacity)
 - Experience with pumped storage project



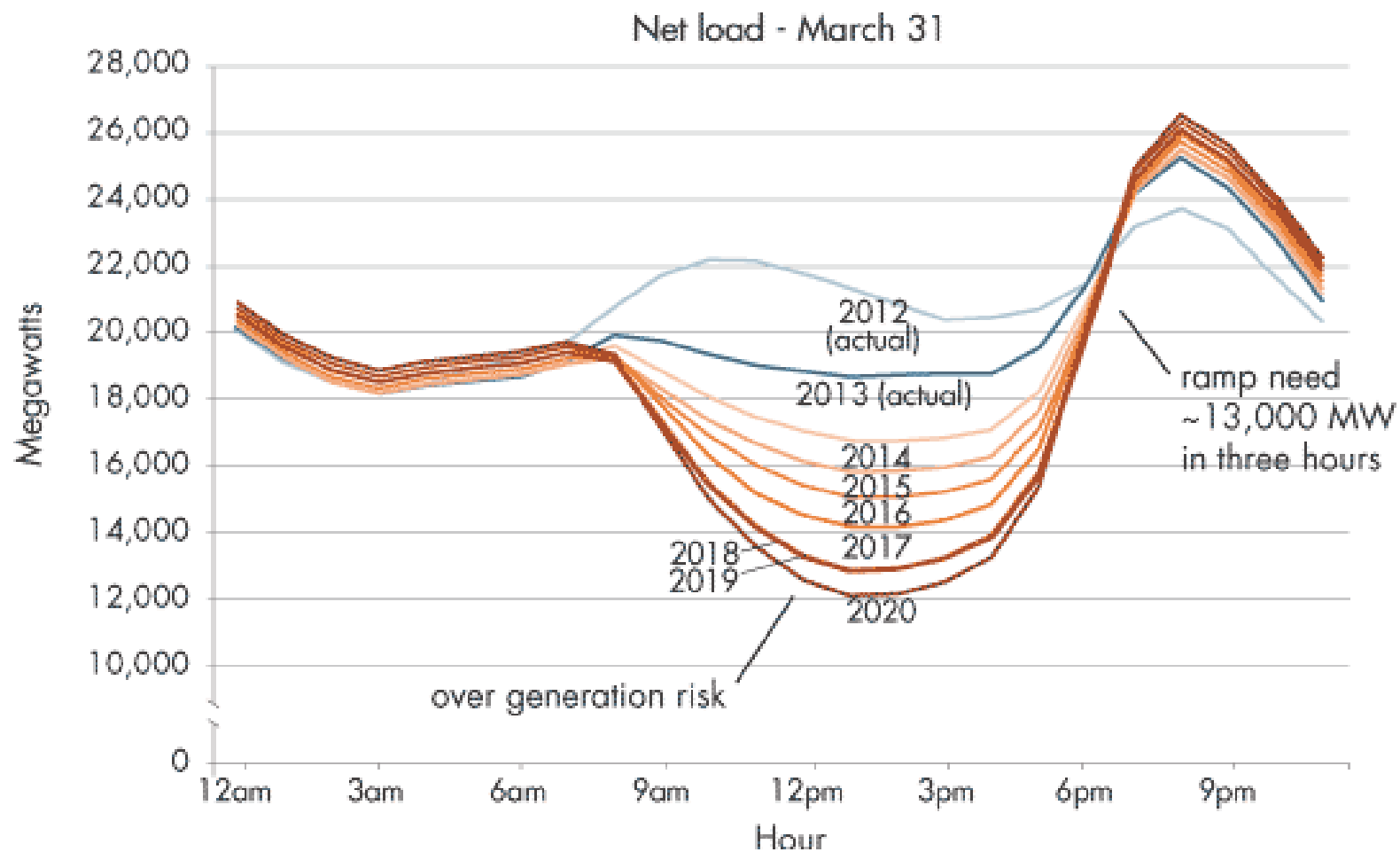


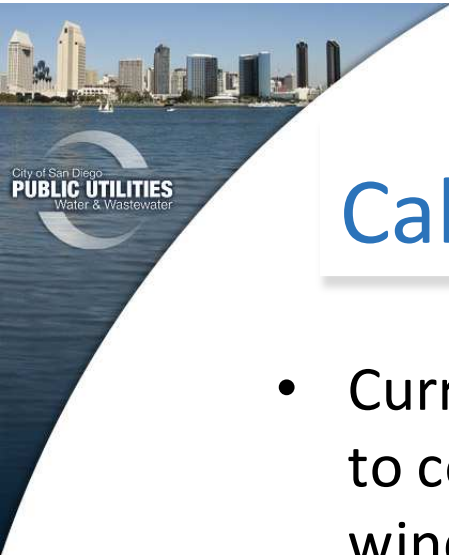
Potential Revenue Streams of SVPSP

- **Capacity Payment** – Payment for being available to produce firm MW of power for defined period of time
- **Ancillary Services** – Specialty service used by California Independent System Operator to balance power grid
- **Arbitrage** – Store electricity when prices are low and deliver it when prices are high



CAISO Forecast for Net Generation





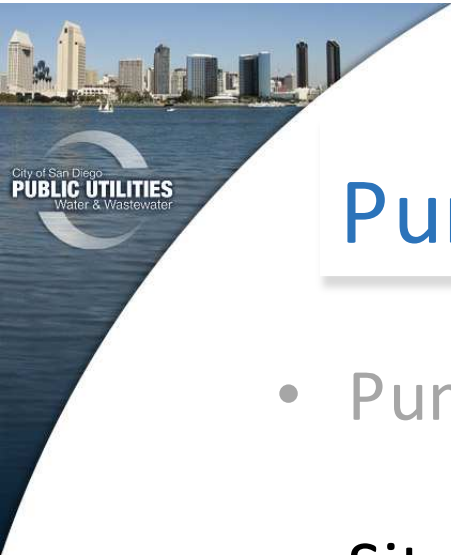
California's Renewable Mandate (AB 32)

- Current requirement: By 2020, 33% of energy portfolio to come from renewable energy resources, such as wind and solar
- Gubernatorial proposal could bring higher renewable requirements (40% - 50%)
 - Legislation pending
 - Wind and solar are highly variable



Climate Action Plan (DRAFT: 30 Sep 2014)

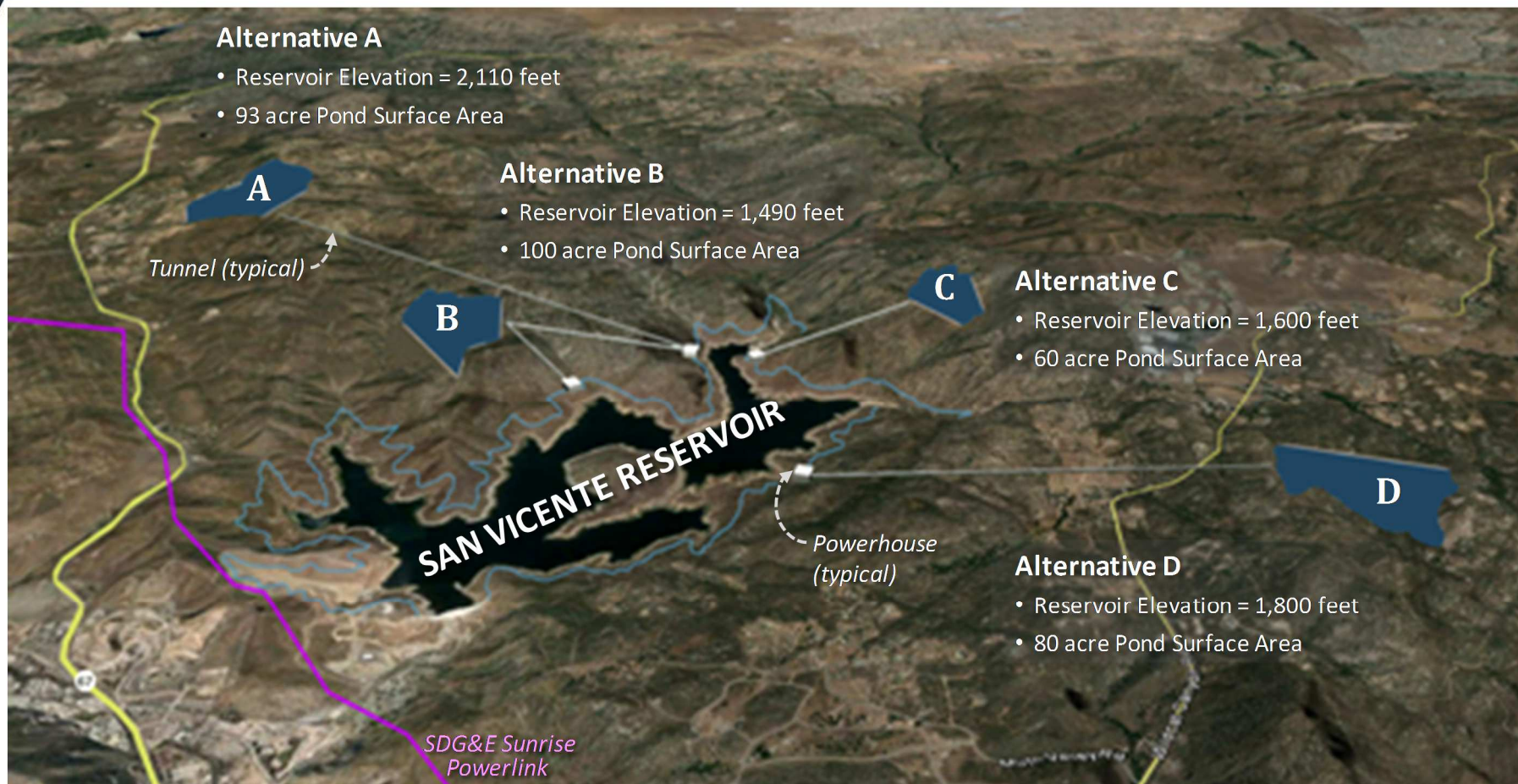
- 100% renewable energy target by 2035
 - Aims for all electricity used in the City to be from renewable sources, such as wind, solar, geothermal, **hydroelectric**, and biomass
- Eliminate 50% of GHG emissions by 2035
 - Based on 2010 greenhouse gas levels
 - Puts the City on track to meet state goal for 2050



Pumped Storage Overview

- Pumped Storage Purpose
- **Site Description**
- Current Status
- Next Steps

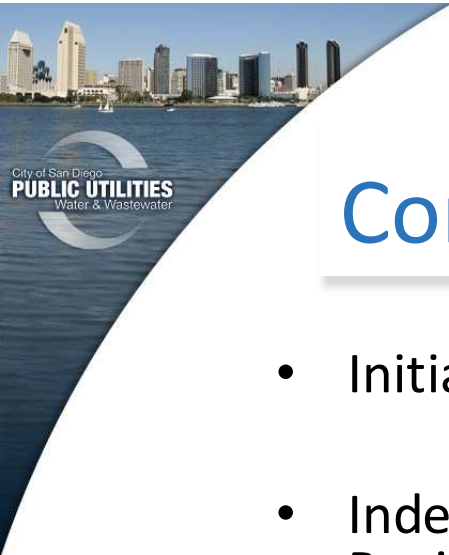
Potential Upper Reservoir Sites





Pumped Storage Overview

- Pumped Storage Purpose
- Site Description
- **Current Status**
- Next Steps



Completed and On-going Work

- Initial Economic and Financial Feasibility Study (Black & Veatch)
- Independent Evaluation of B&V Study and Strategic Positioning
 - Initial Power Market Analysis (Navigant)
 - Preliminary Financial Analysis (Clean Energy Capital)
 - Dr. David Victor (UC San Diego)
- Technical Reservoir Modeling (Water Quality Solutions)
 - Modeling of a likely Pure Water project scenario shows that dilution with pumped storage is equivalent to dilution without pumped storage
 - Initial results have been presented to Pure Water's Independent Advisory Panel and public health regulators for evaluation



Pumped Storage Overview

- Pumped Storage Purpose
- Site Description
- Current Status
- **Next Steps**



City/WaterAuthority Agreement

- Establishes coordination protocol
- Defines roles and responsibilities
- Clarifies future cost sharing
- Co-applicants on FERC permit and license
- Establishes agreement to procure owners' advisor
- Provides estimated project timeline
- Defines decision-making process
- Establishes issues resolution process





Project Milestones

- 1. FERC PAD submittal / upper reservoir screening**
 - Engineering and environmental studies
 - Stakeholder outreach: Tribal, environmental, regulatory
- 2. Procure Owners' Advisor Team**
 - Experienced multidisciplinary team of advisors
 - Represent City and Water Authority
 - Establish one voice
 - Strategic bargaining
 - Provide project development options
 - Identify and evaluate potential business models
- 3. Business model selection and implementation**



Questions?

