



National Disaster Resilience Competition (NDRC)

Approaches to Infrastructure Financing
August 6, 2015



PRESENTERS

Harriet Tregoning, Principal Deputy Assistant Secretary

HUD | Office of Community Planning and Development

Todd L. Rydstrom, Deputy Controller

City & County of San Francisco Controller's Office

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Center for Market Innovation**

Natural Resources Defense Council

DISCLAIMER

- This presentation is intended to provide communities and states with the tools and information to help in climate resilience planning and activities.
- Information presented in this webinar is independent of the Notice of Funding Availability (NOFA) for the National Disaster Resilience Competition (NDRC). While we expect that this information will be useful to interested communities and eligible applicants, *it should not be construed as the definitive word on any singular approach to resilience.*
- No NOFA NDRC questions will answered during this presentation.
- All NOFA NDRC questions should be sent to: resilientrecovery@hud.gov

NDRC TIMELINE

Phase 1

[Framing Unmet Recovery Needs, Vulnerabilities,
and Community Development Objectives]



**Note: These dates are tentative and subject to change at HUD's discretion*

TODAY'S INFRASTRUCTURE CHALLENGES



ASCE "D+" Rating of U.S. Infrastructure in 2014



Limited funds available for investment in existing or new infrastructure



Complex, lengthy processes limit flexibility and responsiveness

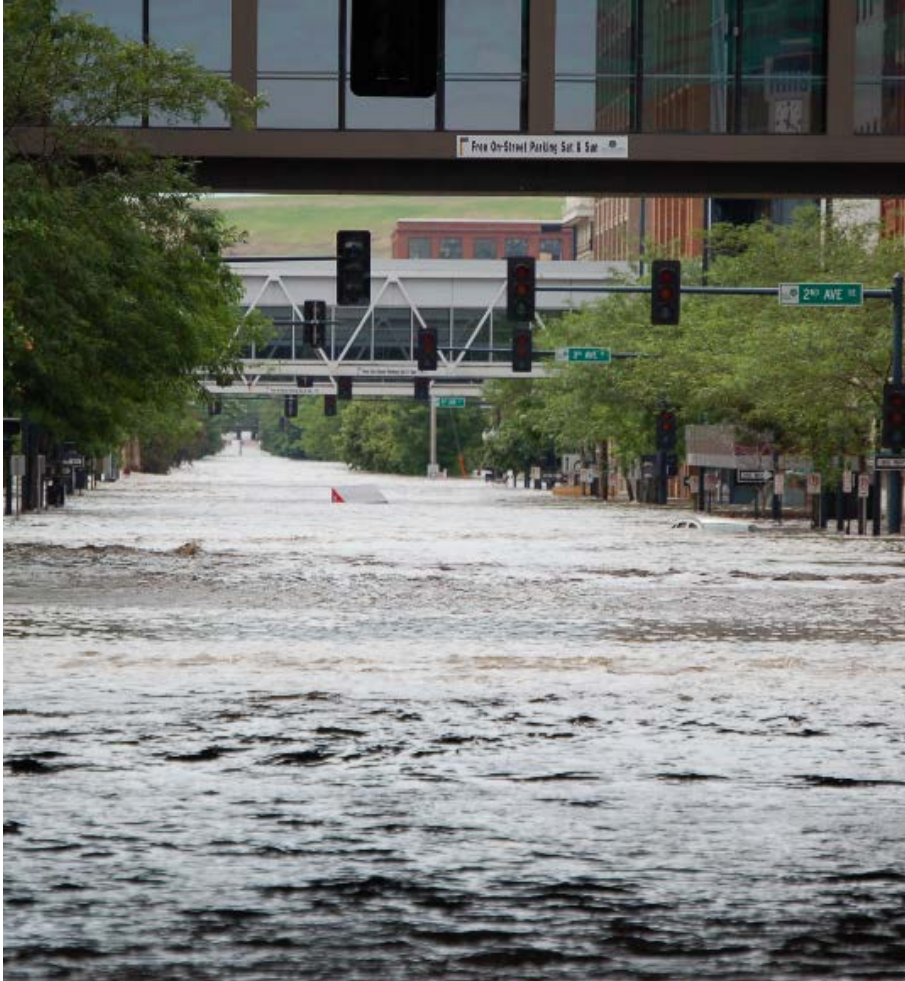


Lack of an investible pipeline of projects



Capacity to plan, design, fund, and partner

INFRASTRUCTURE FOR OUR FUTURE



- Responding to change and future-proofing
- Technology and changing preferences
- Economic changes
- Climate and environmental changes
- Meeting the needs of the entire community

DESIRED INFRASTRUCTURE OUTCOMES



Cost-Effective



Multiple Benefits



Resilient



Equitable



Full Life Cycle



Innovative

WHITE HOUSE BUILD AMERICA INITIATIVE

July 2014 Presidential Memorandum: “A government-wide initiative to increase infrastructure investment and economic growth by engaging with state and local governments to encourage collaboration, expand the market for public private partnerships and put federal credit programs to work.”

Build America Working Group: Eleven Federal agencies working individually and together to support the initiative

Build America Accomplishments:

- DOT and EPA have established investment centers providing technical assistance and supporting innovative financing strategies for transportation and water infrastructure
- Treasury providing policy guidance on approaches to public-private financing
- Tackling alignment of federal processes
- Ongoing coordination with public, private, and non-profit infrastructure investors

OVERVIEW

- **HUD is a member of the Build America Working Group under the Build America Investment Initiative**
- **HUD programs support infrastructure**
 - 50% of State CDBG funds and 33%+ of overall program funds spent on public facilities and infrastructure investments
- **HUD is particularly interested in infrastructure predevelopment**
 - Includes planning, design, engineering, reviews and permitting, public engagement, funding strategies
- **HUD sees the value proposition in predevelopment – done right, it has an out-sized impact on infrastructure outcomes, creating more and better projects.**

BUILD AMERICA RESOURCES

Build America Investment Initiative

Federal Resource Guide for Infrastructure Planning and Design

MAY | 2015

Pursuant to Presidential Memorandum
"Expanding Federal Support for Predevelopment Activities for Nonfederal
Domestic Infrastructure Assets", signed January 16, 2015

- [Federal Resource Guide for Infrastructure Planning and Design](#)
- [USDOT Build America Transportation Investment Center](#)
- [USEPA Water Infrastructure and Resiliency Finance Center](#)
- Email Contact:
economicresilience@hud.gov

PREDEVELOPMENT PRINCIPLES

1. Base Project Objectives on Regionally or Locally Established Plans and Policies
2. Conduct and Utilize Comprehensive Analysis to Determine Needs and Approaches
3. Seek Broad Community Engagement and Support
4. Position Communities to Advance Equity
5. Foster the Potential for Multiple Funding Sources
6. Consider Multiple Potential Scenarios for Achieving Desired Outcomes
7. Coordinate with Other Infrastructure Investments
8. Employ Adaptable and Reliable Technologies that Look to the Future

UNLOCKING THE MARKET FOR MORE AND BETTER INFRASTRUCTURE

*Report to NDRC Applicants
from the High Road infrastructure working group*

AUGUST 6, 2015

Douglass Sims, Director of Strategy and Finance, Center for Market Innovation @ NRDC (dsims@nrdc.org)



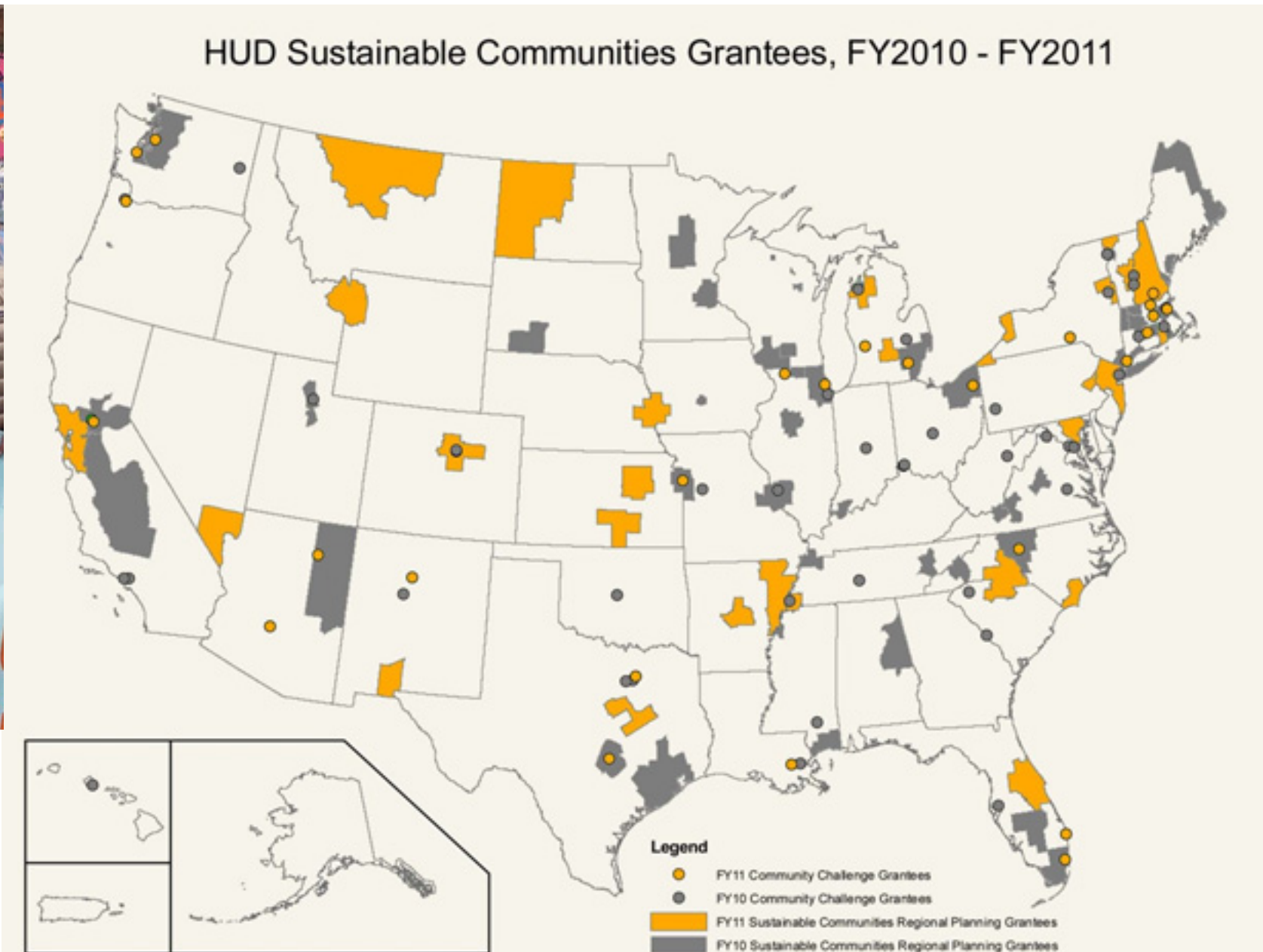
FORD
FOUNDATION



US Cities face an infrastructure and climate crisis

- \$3.6 trillion by 2020 in basic infrastructure needed
-
- \$188 billion in city weather damages in metro areas
-
- Most carbon emissions emanate from cities
-
- Affects competitiveness
-
- Opportunity for increased productivity and quality of life
-
- But standards are needed to elevate the right projects

Our Down Payment

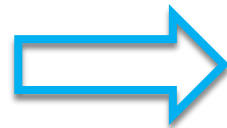


The Missing Middle



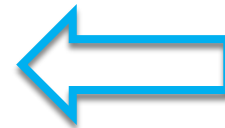
SMART PLANNING

Obama Administration's Place-Based Initiatives are building local capacity to plan for resilient, inclusive communities. High Road Infrastructure is now widely desired



PRE-DEVELOPMENT

The missing tools, standards and capacity that get us from vision to implementation



INVESTMENTS

Plenty of investor interest in High Road infrastructure – pension funds, market investors, impact investors, muni-bond market – but no clear pipeline of projects and no standards that lift good projects up

Our Team



Project Lead



Pre-Development activities, exchanges, infrastructure



Pre-Development activities, municipal finance, case studies



Investors and pension funds



Federal policy and engagement



Case studies, blended capital funds



Case studies, blended capital funds

Our Brief – Find the Missing Middle



EVOLVE THE DISCUSSION

Beyond “to P3 or not to P3” to “better projects get more public and private financing and support”



INVESTMENT PLAN

Map out how to increase public and private investment in infrastructure that delivers superior benefits to communities and can be implemented more quickly, efficiently and equitably



MAKE IT HAPPEN

Engage Denver and Los Angeles on where High Road projects are getting stuck and workshop pipelines with deal makers, Federal government, and investors



DEFINITIONS

*What puts infrastructure on
the High Road?*

High Road Infrastructure

FULFILLS CORE FUNCTION



DELIVERS RESILIENCE AND ENVIRONMENTAL
AND SOCIAL BENEFITS COST EFFECTIVELY

What are standards? What are they needed?



Environmental and resilience standards account for true costs and benefits (water, air, carbon, natural disaster preparedness)



Social standards ensure value added rather than extracted (jobs, affordability, transparency, community engagement)



Financial standards ensure viability and value for money (ROI, NPV, life cycle analysis, contract risk allocation)



Standards signal long term value to investors (ESG screens, climate/natural disaster hedge, growth promotion)

How are Standards used by those on the High Road?



Public sector for prioritizing projects and targeting subsidies



Philanthropy for targeting resources and engaging stakeholders



Investors for vetting projects



Citizens for judging whether voices are heard

Applying High Road Standards to Investment Decisions

- Elevates the highest value projects

- Strengthens economic vitality

- Raises resilience, lowers carbon and other pollution

- Preserves natural resources, improves quality of life

- Builds community consensus

- Ensures “biggest bang for the (public) buck”

Examples of High Road Infrastructure

HIGH ROAD SUBSECTORS

Environment focus

- Solar, EV charging
- Energy Efficiency, storage
- Green infrastructure

Resilience focus

- Recycled water
- Hardening
- Microgrids

Social and Community focus

- TOD, Affordable housing
- Parks, green space
- Food hubs, health clinics
- Access to jobs

Geographic focus

- Comprehensive community revitalization
- Place-based resiliency
- Urban repair, connectivity

Examples of High Road Infrastructure

CRITICAL INFRASTRUCTURE DONE “THE RIGHT WAY”

Utility scale clean energy

District heating/cooling

Ports, airports

Water and wastewater
infrastructure

Transit, bikes, pedestrians

Bridges, tunnels

Waste and recycling

Schools, public buildings



BARRIERS + GAPS

*If High Road Infrastructure is a Good Idea,
Why Isn't More of It Being Built?*

What's on the Low Road?



Privatization
for short term
benefits



Labor
arbitrage



Bad decisions
driven by
austerity



Not planning or
designing for
resilience



Deferring hard
decisions



Not seeing or
capturing
synergies



Locking in
outmoded
technologies



Transforming
places but
displacing people

Structural Roadblocks



No single entity
with the
responsibility/capacity
to move projects



The enabling
environment may
not be aligned



Lifecycle costs
(O&M and capital)
not considered
together



Public
agencies/regulators
hesitate to embrace new
technologies



Weak structures for
community feedback

Capacity Potholes



Lack of bandwidth



Need ways to apply
standards



Silo-ed institutional
budgets and
decision-making



Lack of expertise to
consider all potential
delivery and finance
options

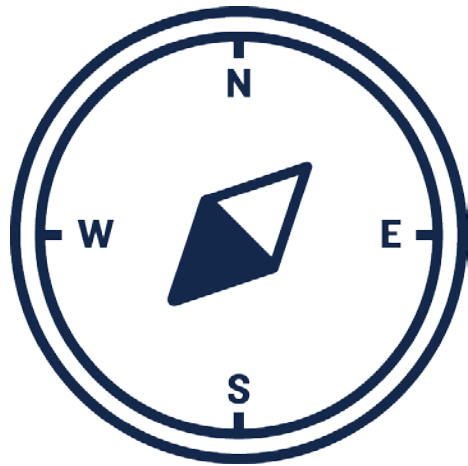


Lack of experience in
working with non-
traditional financiers



Trouble identifying
funding/financing
sources for priority
projects

Difficulty in Locating Funding



Lack of bonding
capacity/credit
rating

Lack of political
will to raise
taxes/fees

Federal funds
not always
user-friendly,
coordinated and
flexible

Traditional
P3s options may
misallocate risk

Philanthropy/mission-driven deals
may be complex
one-offs

Hard to value
avoided costs and
High Road
outcomes

Scales of
projects may not
align to funding
sources



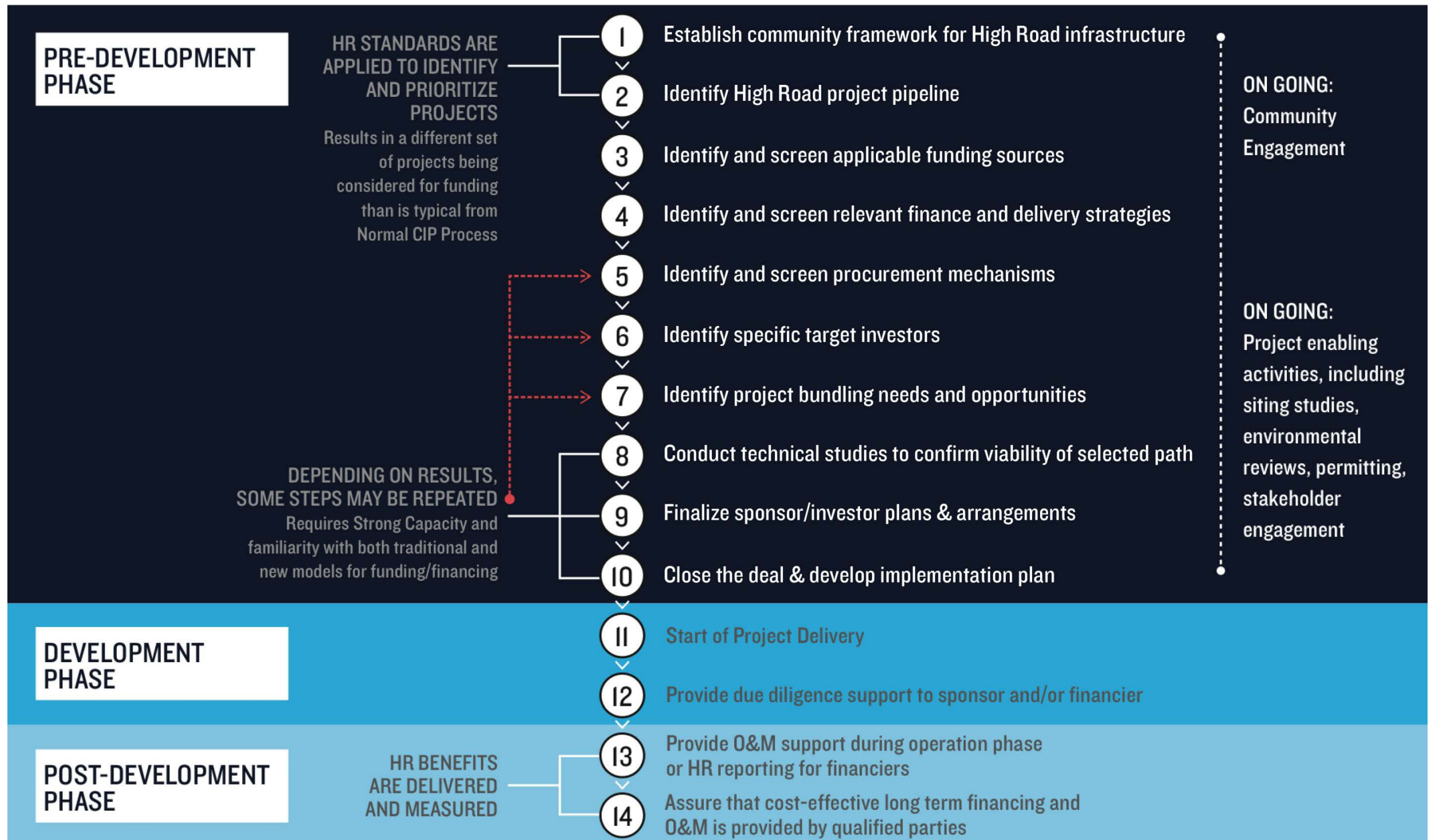
SOLUTION SETS

*Better Planning and Pre-Development
Protocols + More Capacity through
Intermediaries +
New Models for Investment*

Better Planning (underway)

- Integrated, outcome-oriented planning is critical to getting on the High Road
-
- Sustainable Communities grantees have been trained to seek out High Road outcomes and have adopted plans in place
-
- Federal initiatives, like the National Disaster Resilience Competition, offer financial rewards for doing planning differently and could lead to pipelines of strong projects for investors

Better Pre-Development Protocols



Case Study: Prince George's County Urban Retrofit P3



Request for Qualifications

RFQ S13-083

**Urban Retrofit Program
Public Private Partnership**



Environmental: NPDES MS4 permit imposes a legal obligation - a standard - to reduce water pollution from runoff. Geography is urban, rural and suburban



Economic: stormwater fee revenues need to be raised, which must be approved by county government



Social: Environmental leadership perceives opportunities for community and economic development, neighborhood betterment, jobs and education

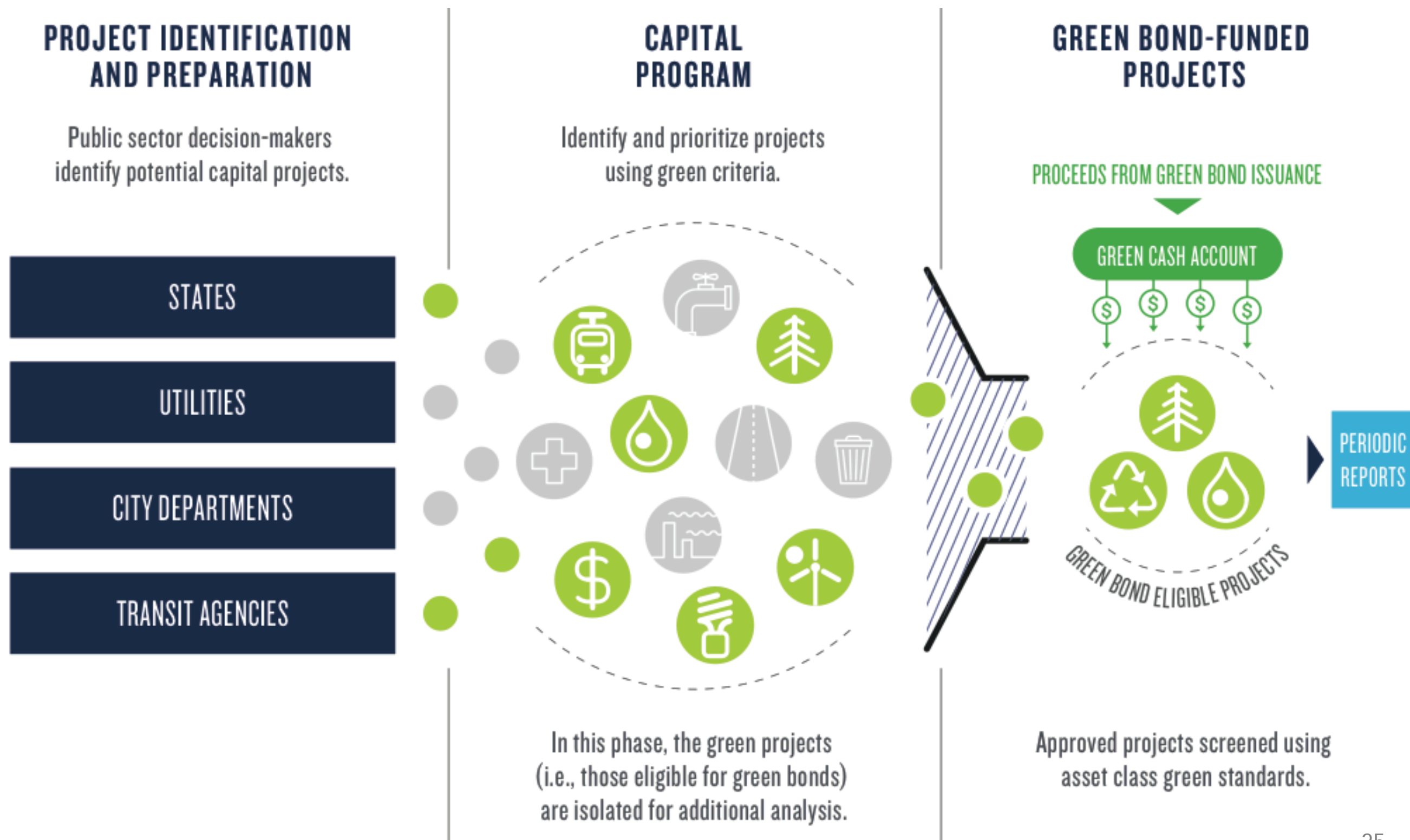


Barriers: wide-ranging, complex construction project and limited county management capacity, 2017 deadline, technology risk, how to achieve social outcomes

10 Step Protocol in Action – PG County P3

- 1: Translated MS4 compliance into community development
- 2: Chose pipeline of GI that yields HR benefits
- 3: Secured stormwater fee as funding source (unanimous)
- 4,5,6: Identified DBOM, RFQ process and candidate firms
- 7,8: Prioritized sites with high social and compliance value
- 9,10: (Now) negotiate contracts and implementation plan

Case Study: Green Municipal Bond Market



More Capacity through Intermediaries



PROJECT PREPARATION INTERMEDIARIES

Assist with procurement models, RFP design, back office, contract negotiation, project closing, and accessing private sector partners (WCX, Partnerships BC, Environmental Finance Center for water/wastewater, equivalent transportation networks)



MARKET TRANSFORMATION INTERMEDIARIES

Enable markets by providing risk mitigation to early investors, standardizing contracts, applying standards, demonstrating aggregation strategies (NY Green Bank, CT Green Bank and mission-driven entities like CDFIs)



INTERGOVERNMENTAL ALLIANCES

Coordinate municipal or regional infrastructure opportunities and leverage collective resources and experience (Calumet Stormwater Collaborative, North Denver Cornerstone Collaborative, LA City Infrastructure office)

New Models for Investment



Pension Funds: New models that permit more direct investment in infrastructure are being launched, potentially providing a huge source of reasonably priced capital, if investible High Road pipelines can be created



CDFIs: The community investment model of blending grants, tax credits, PRI, and commercial capital to maximize social value succeeds in real estate. CDFIs now look to move into community scale infrastructure

THANK YOU



Communicating Needs, Ratepayer Affordability & Accountability

... A CFO's Perspective

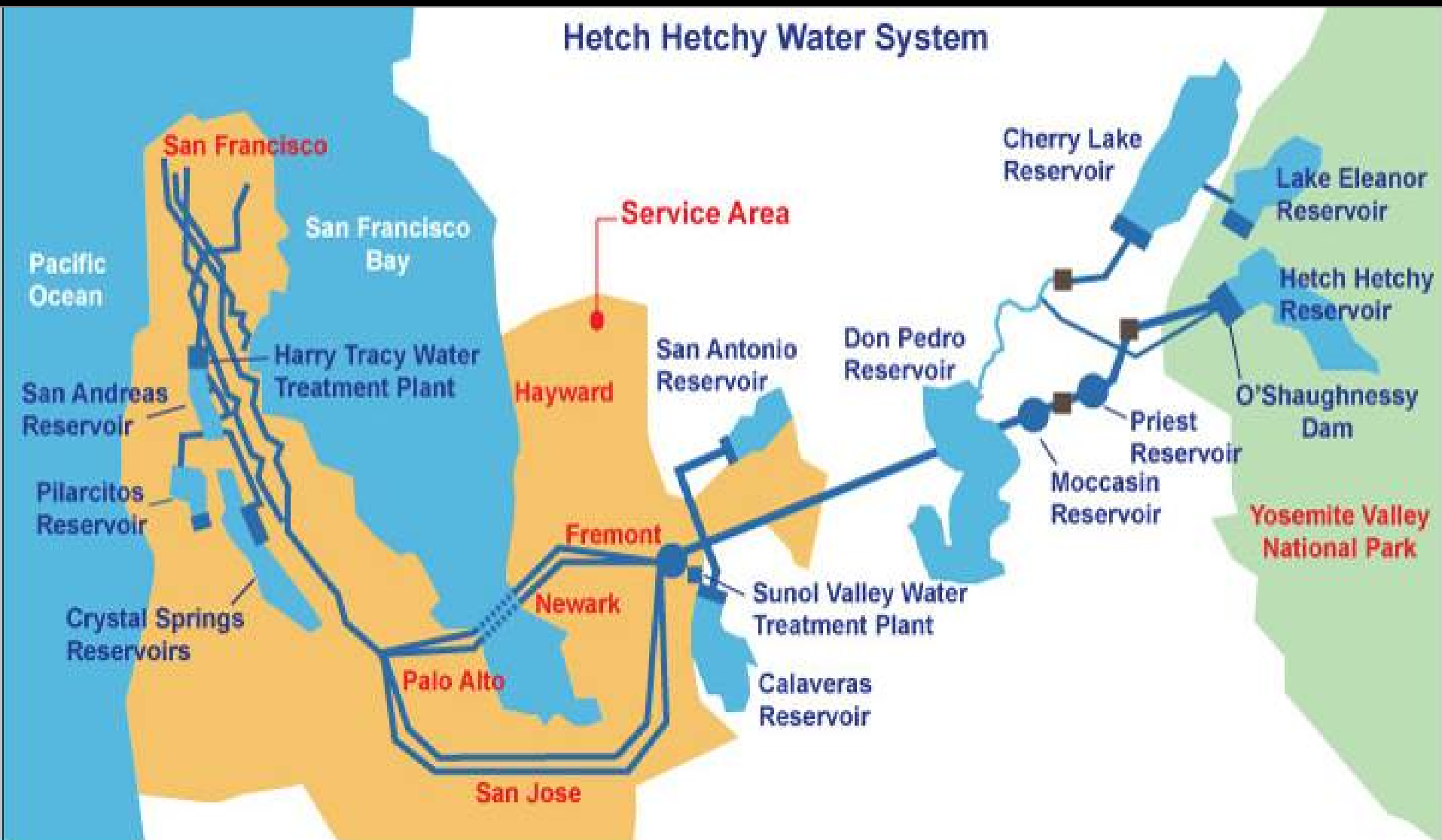
Todd L. Rydstrom

Deputy Controller

City & County of San Francisco

[former SFPUC Assistant General Manager & CFO]

SFPUC Service Area, 2.6 Million





\$4.8 Billion

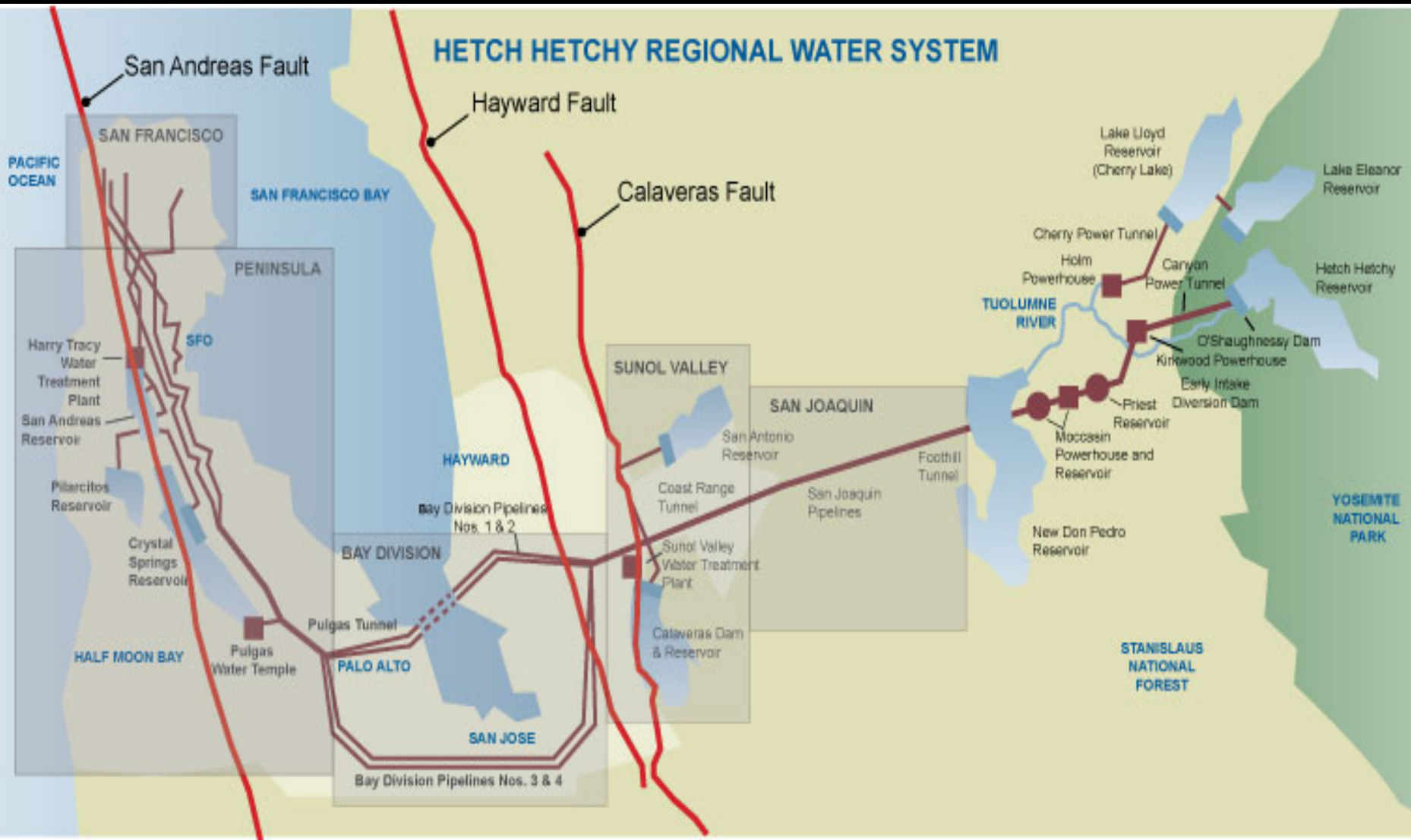
80+ Projects

35 local, 48 regional

7 counties

2019 completion

3 Major Earthquake Faults Not 'If', But 'When'



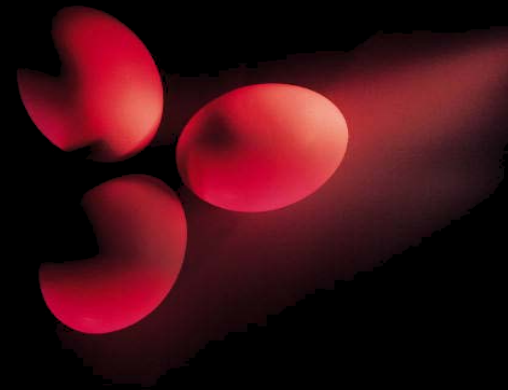
But WHY

- No water for 10-30 days
- Potential economic losses
- Irreversible damages to entire Bay Area
- Public health and safety of 2.5 million people

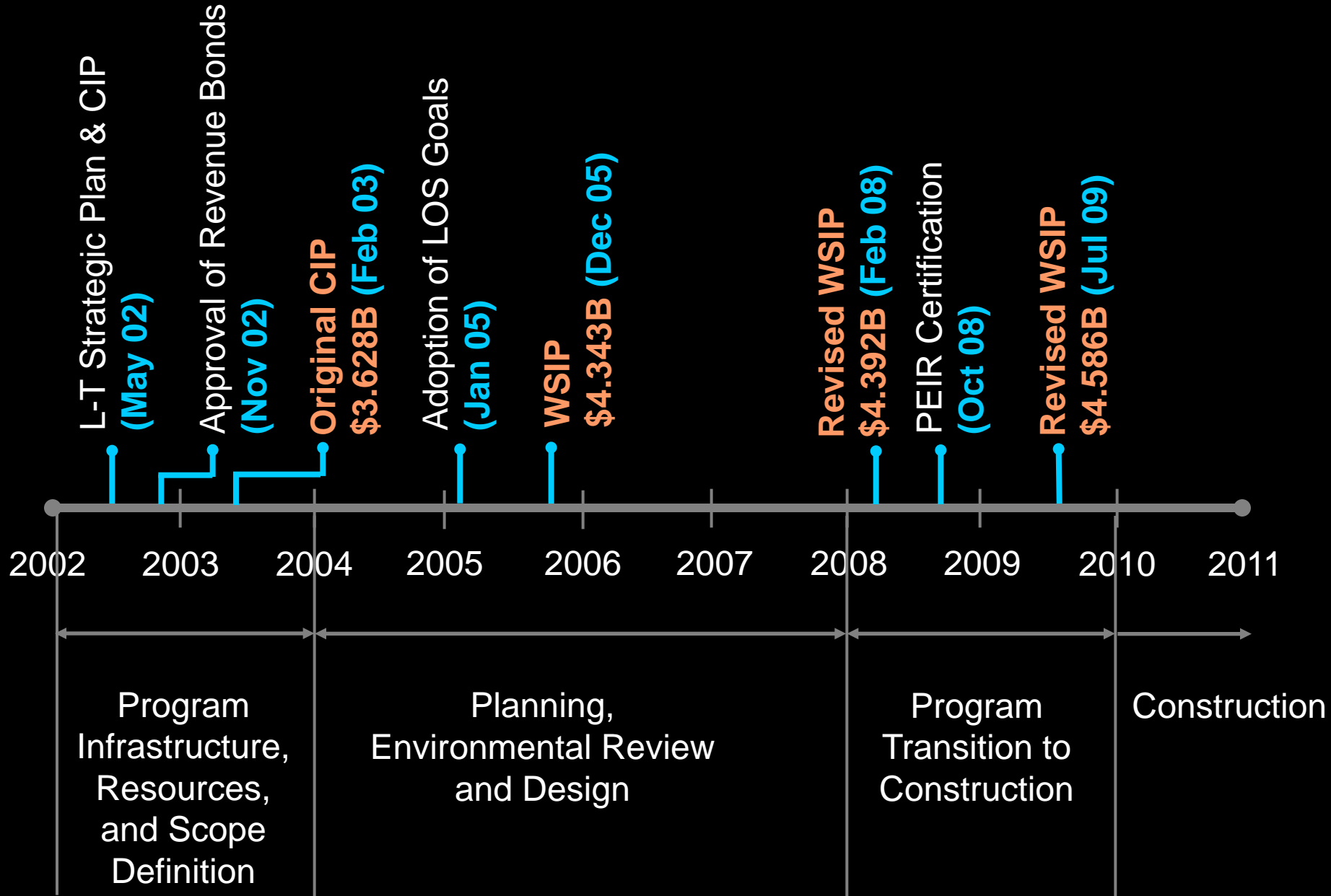


How Program Started

- Tipping Point: Loma Prieta 1989
- Master Planning Efforts
- May 2002 SFPUC Commission Approval of:
 - Long-term Strategic Plan
 - Long-range Financial Plan
 - Capital Improvement Program (CIP)
- Political Pressure
- 2002 Ballot Measures



WSIP Timeline



It's Not “If” But “WHEN”



San Francisco 1906



Hayward 1868

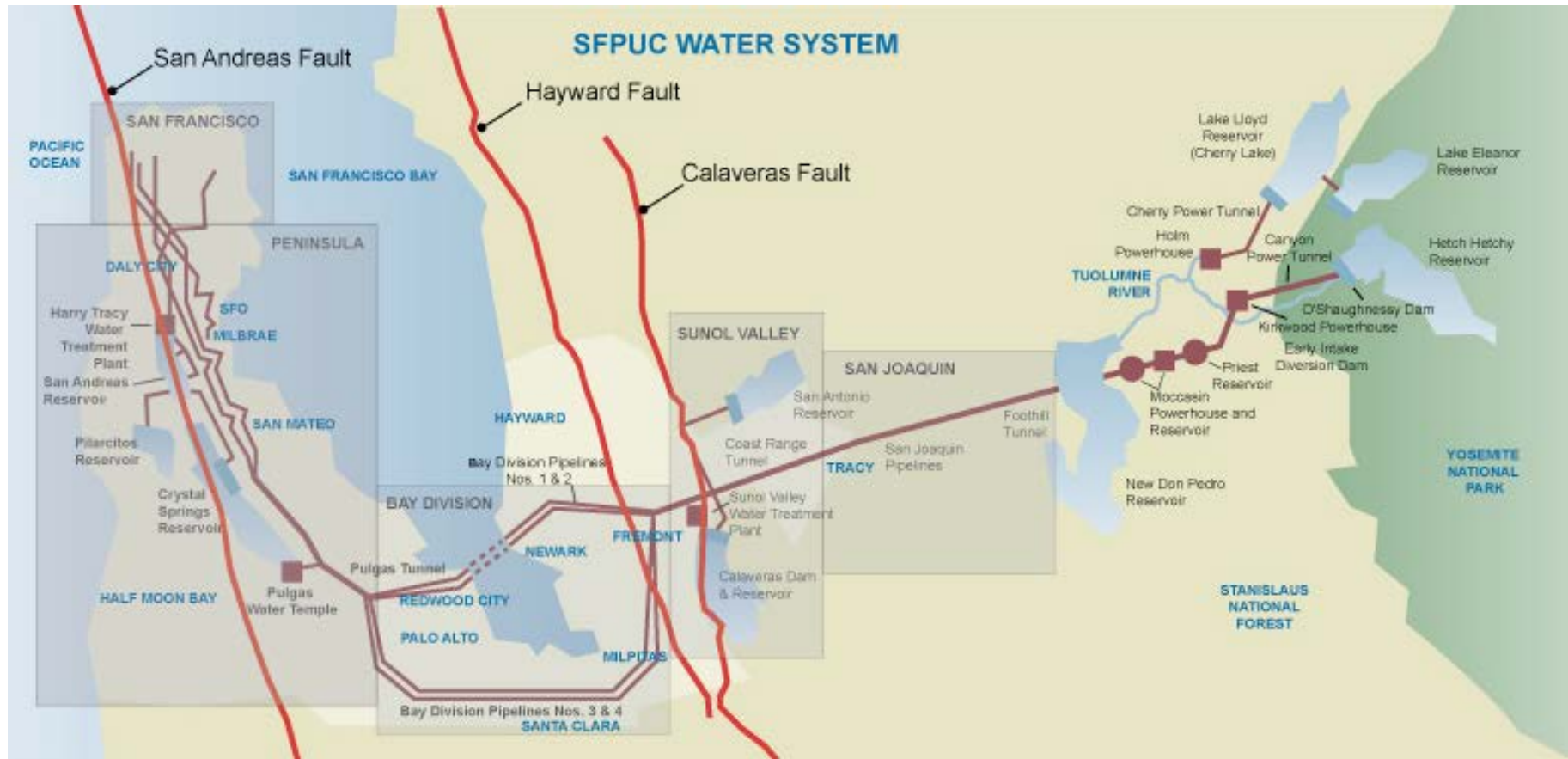


Loma Prieta 1989

Lessons Learned

- 1. Assessing Vulnerabilities**
- 2. Communicating the Risks**
- 3. Communicating Needs,
Costs & Benefits**
- 4. Paving a Pathway to
Program/Project Success**

Where We've Been, Where We Are...

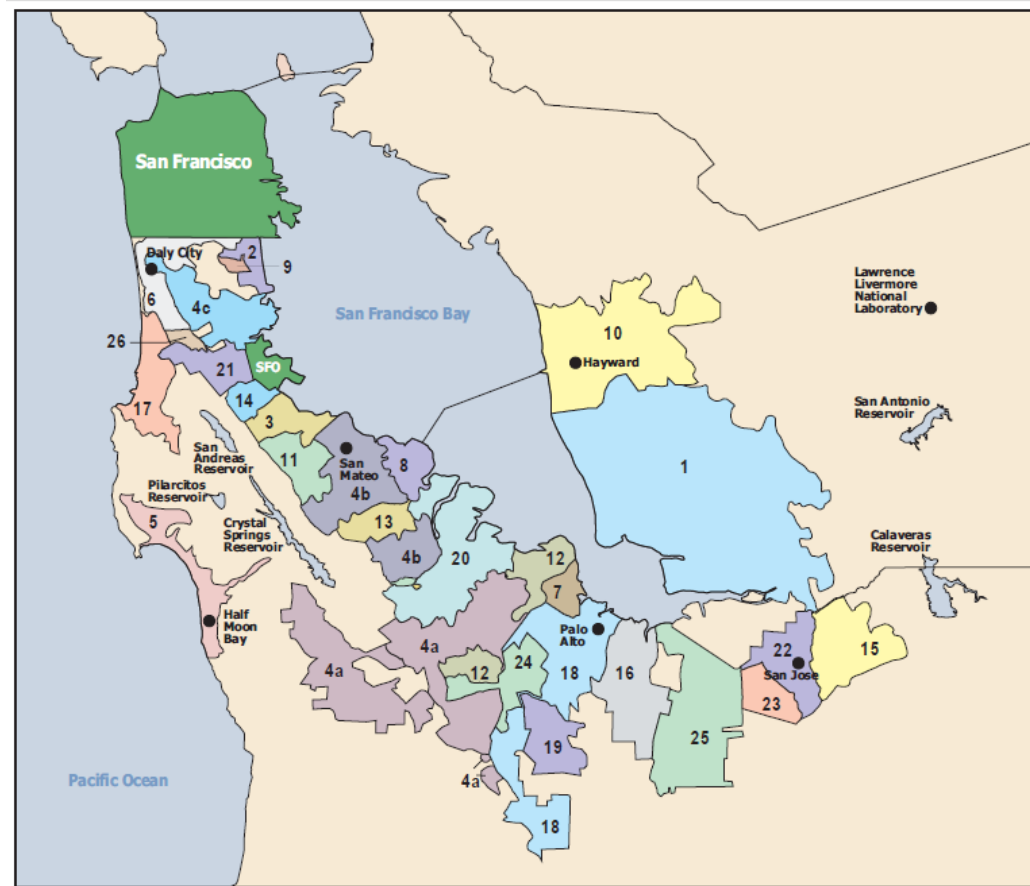


Key Partners: SFPUC Wholesale Customers

Services of the San Francisco Public
Utilities Commission

- Wholesale purchases account for 2/3 of water deliveries and approximately 1/2 of revenues

- Alameda County Water District
- City of Brisbane
- City of Burlingame
- a. CWS – Bear Gulch
- b. CWS – Mid-Peninsula
- c. CWS – South San Francisco
- Coastside County Water District
- City of Daly City
- City of East Palo Alto
- Estero Municipal Improvement District
- Guadalupe Valley MID
- City of Hayward
- Town of Hillsborough
- City of Menlo Park
- Mid-Peninsula Water District
- City of Millbrae
- City of Milpitas
- City of Mountain View
- North Coast County Water District
- City of Palo Alto
- Purissima Hills Water District
- City of Redwood City
- City of San Bruno
- San Jose Municipal Water System
- City of Santa Clara
- Stanford University
- City of Sunnyvale
- Westborough Water District



Note: Cordilleras Mutual Water Association not shown on map. Cordilleras consists of 18 single-family homes.

Critical Infrastructure Needs & Risks



Calaveras Dam Replacement

An aerial photograph showing a large-scale construction project for a dam replacement. The central feature is a massive, light-brown, terraced landslide area that has been excavated and stabilized. To the left, a dark blue reservoir is visible, with yellow lines indicating a boundary or path. The surrounding landscape is a mix of dry, brownish hills and patches of green trees. The overall scene depicts a significant engineering and geological challenge in a natural setting.

Landslide

Working Underground / Water



Bay Tunnel



BDPL Reliability Upgrade - Pipeline



Courtesy Jacobs Associates

New Crystal Springs Bypass Tunnel

Calaveras Dam Replacement

Project Cost: \$421M

Status: In Construction

New earth and rock filled dam



University Mound Reservoir – North Basin

Project Cost: \$43M

Status: Construction Completed

Seismic upgrades to existing City reservoir

New Irvington Tunnel

Project Cost: \$339M

Status: In Service as of February 2015

3.5-mile, 9-foot diameter tunnel



New Irvington Tunnel



Tesla Treatment Facility



Project Cost: \$111M

Status: Construction Completed

300 MGT UV Disinfection Treatment Facility

SVWTP Expansion & Treated Water Reservoir

Project Cost: \$133M

Status: Completed October 2014

Upgrade and expansion of existing treatment facility



Meaningful Ratepayer & Stakeholder Communications

A photograph of a worker inside a tunnel, likely the San Francisco Bay Tunnel. The worker is wearing a hard hat with a headlamp, a bright green high-visibility shirt, blue gloves, and brown overalls. He is holding a tool or device. The tunnel interior is dark, with various cables and equipment visible in the background.

SF Bay Tunnel

Tesla Treatment Facility



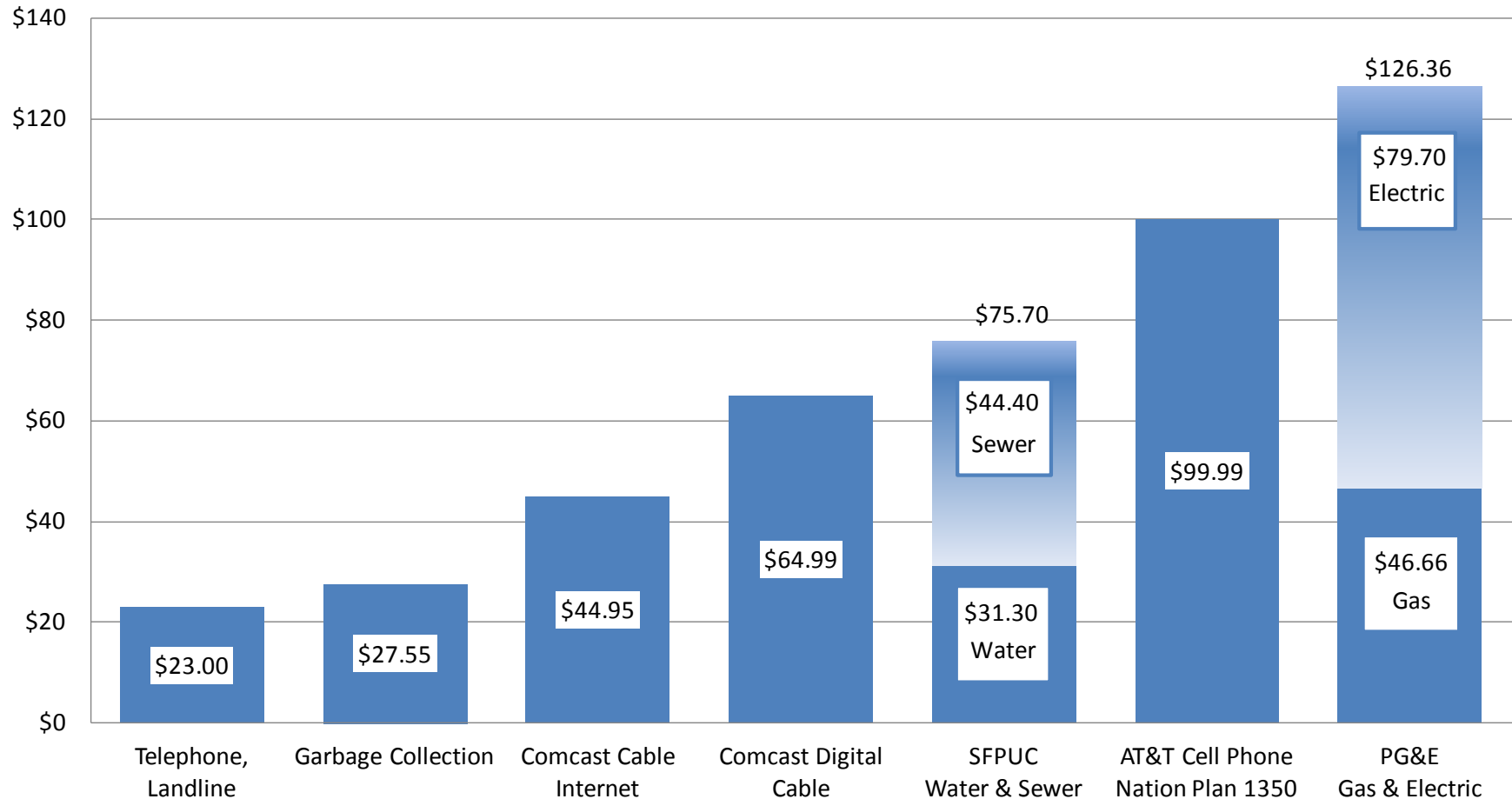
- **Paying the Bills**
- **Voter Bond Approval 2002**
- **3x Water Rates, \$14 --> \$41**
- **New Wholesale Contract 2009**
- **25 Years + 2, 5-Year Options**



Communicating Affordability

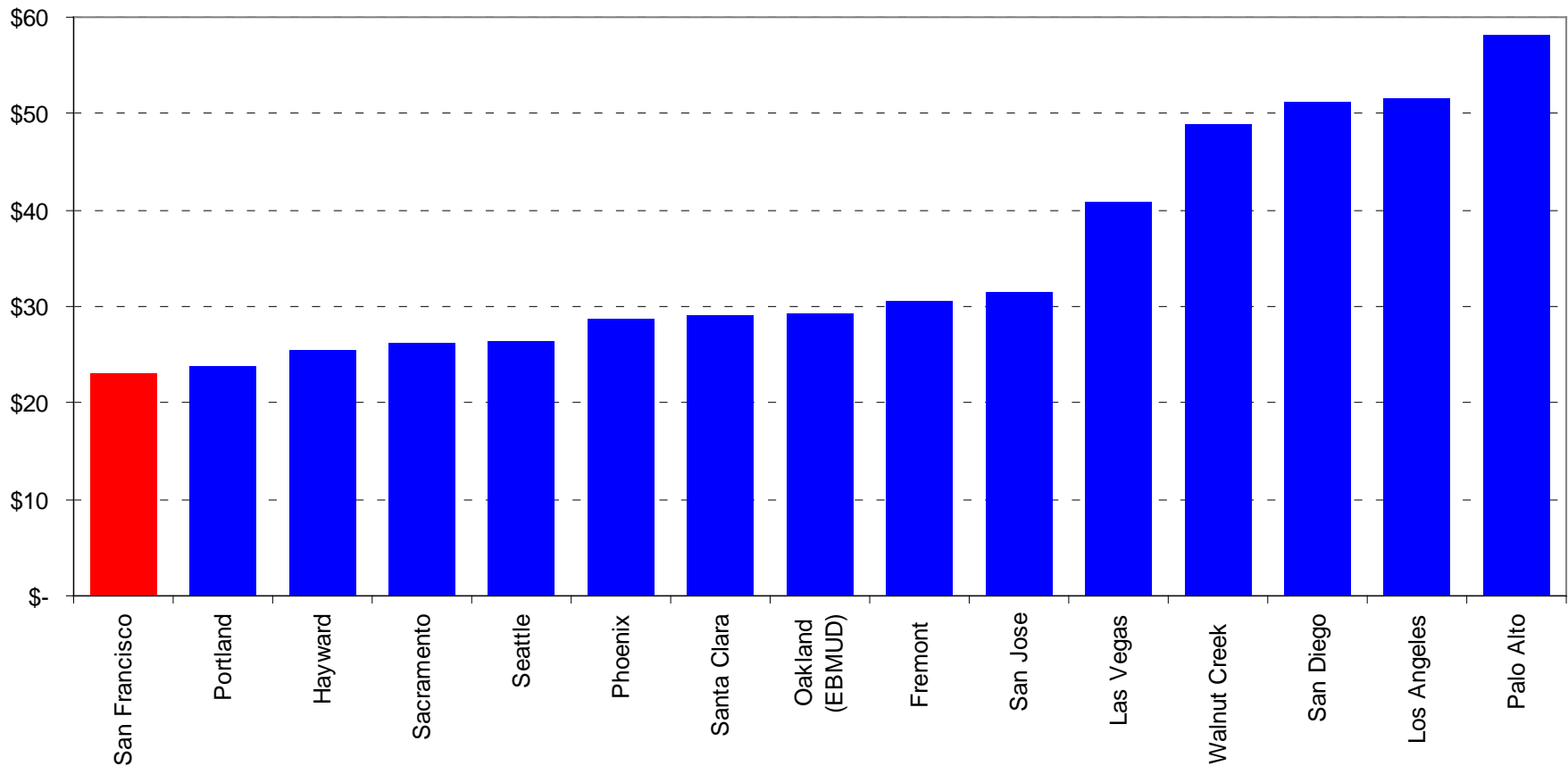
Services of the San Francisco Public
Utilities Commission

FY 2011-12 monthly average bill: \$31 Water, \$44 Sewer



Average Monthly Water Bills, FY 2008-09

Services of the San Francisco Public
Utilities Commission



Average Water Bills & Rate Changes

Services of the San Francisco Public
Utilities Commission

| | Fiscal Year | Average Water Bill (based on 7ccf) | Rate Change |
|-----------|--------------------|---|------------------------|
| Adopted | 2005-06 | \$16.57 | 15.0% |
| | 2006-07 | \$19.09 | 15.0% |
| | 2007-08 | \$20.84 | 15.0% |
| | 2008-09 | \$23.10 | 15.0% |
| | 2009-10 | \$26.57 | 15.0% |
| | 2010-11 | \$30.55 | 15.0% |
| | 2011-12 | \$34.37 | 12.5% |
| | 2012-13 | \$38.66 | 12.5% |
| | 2013-14 | \$41.18 | 6.5% |
| Projected | 2014-15 | \$45.30 | 10.0% |
| | 2015-16 | \$49.83 | 10.0% |
| | 2016-17 | \$54.81 | 10.0% |
| | 2017-18 | \$55.96 | 2.1% |
| | 2018-19 | \$55.96 | 0.0% |
| | 2019-20 | \$55.96 | 0.0% |