



**PUBLIC-PRIVATE PARTNERSHIPS**  
FOR WATER SYSTEMS AND WATER TREATMENT

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A hand is shown in the upper left corner, holding a small amount of coins. The coins are falling in a vertical stream towards the bottom of the page, where they have accumulated into a pile. The coins are of various denominations and colors, including silver, gold, and blue.

## THE LANDSCAPE

- ↑ Financial deficits at all levels of government.
- ↑ Higher and differing demands on existing infrastructure.
- ↑ Need for new infrastructure and/or increasing costs to maintain existing infrastructure.
- ↑ Government challenges in increasing revenues and/or acquiring capital.

# WATER SYSTEMS AND WATER TREATMENT - BACKGROUND

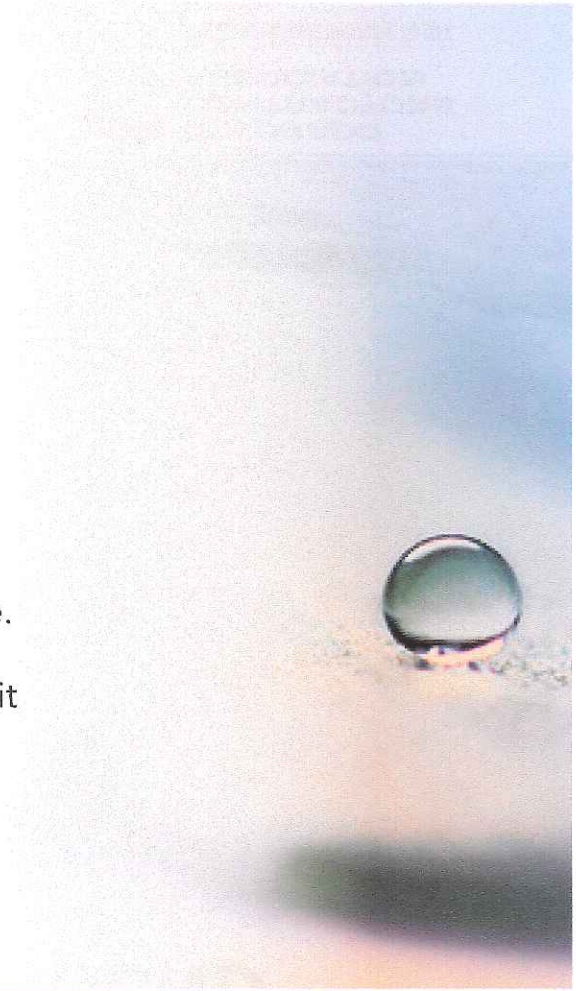
## Primary water challenges Colorado faces

- ▶ Growing water supply gap
- ▶ Growing funding gap
- ▶ Sustained and systemic drought
- ▶ Destructive wildfire
- ▶ Record flooding
- ▶ Population Growth
- ▶ Meeting agricultural needs

# COLORADO'S WATER PLAN

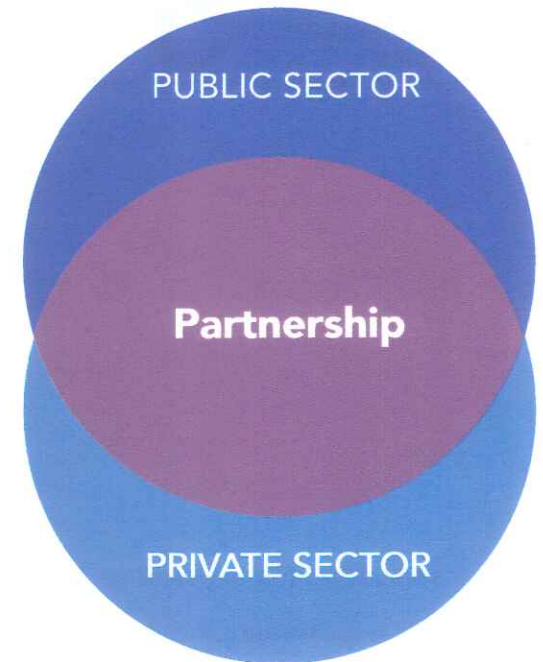
Framework to guide future decision-making and to address water challenges with a collaborative, balanced, and solutions-oriented approach.

- ▶ GOAL: Improve the regulatory processes, and explore financial incentives
- ▶ THREE PRIMARY VALUES:
  - A productive economy that supports vibrant and sustainable cities, viable and productive agriculture, and a robust skiing, recreation and tourism industry.
  - Efficient and effective water infrastructure.
  - A healthy environment that includes healthy watersheds, rivers, streams, and wildlife.
- ▶ In achieving these values, Colorado must confront these issues quicker than others as it is one of the fastest growing states in the country.
  - Population growth
  - Environmental stress



## WHAT IS A P3?

- ▶ A Public-Private Partnership is a contractual agreement between a public agency (federal, state or local) and a private sector entity.
- ▶ Through this agreement, the skills and assets of each sector are shared in delivering a service or facility for the use of the general public.
- ▶ In addition to the sharing of the resources, each party shares in the potential risks and rewards in the delivery of the service and/or facility.



Source: [www.ncppp.org](http://www.ncppp.org)



## POTENTIAL BENEFITS AND RISKS

### BENEFITS

- The use of private finance enables the public to have access to improved services sooner.
- Introducing private sector technology and improved operational efficiency.
- Incentivizing the private sector to deliver projects on time and within budget.
- Developing local private sector capabilities (e.g., transportation, energy, urban development).
- Improving the quality/quantity of basic infrastructure.
- Diversification in the economy.
- Supplementing limited public sector capacities to meet the growing demand for infrastructure development.
- When structured correctly, P3 projects can deliver better/ long-term Value for Money.
- Shifting the risk of financing.

### RISKS

- Difficult to analyze the Value for Money
- Some projects may be politically /socially challenging to introduce due to concerns about privatization.
- Private sector will only do what it is being paid to do.
- A clear legal and regulatory framework is crucial.
- Difficult to identify all possible contingencies.

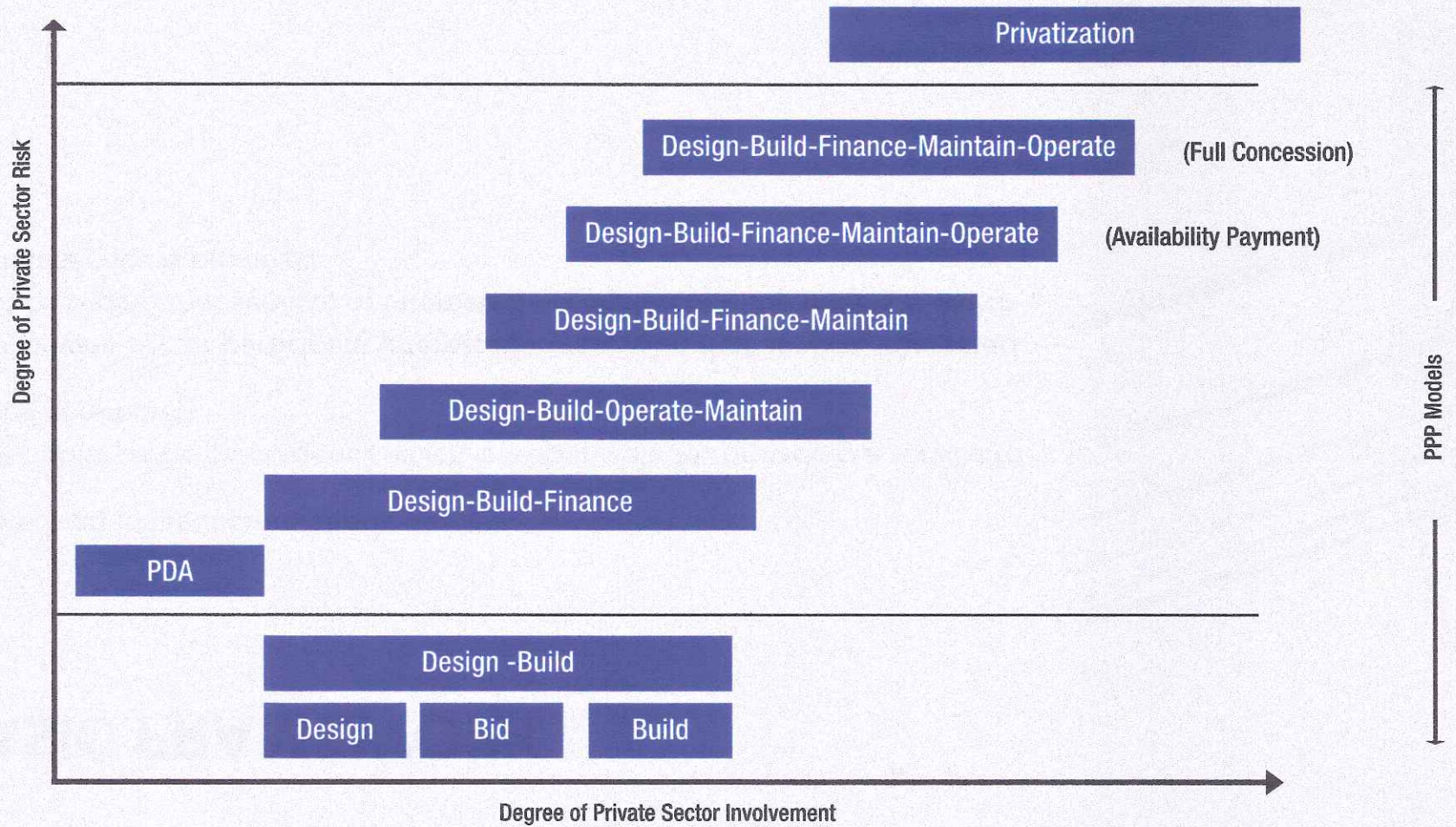
# BASIC FRAMEWORK

- ▶ There is an infrastructure need.
  - A public participant agency which is responsible for providing a service to the community.
  - A private sector participant interested in receiving that service, interested in providing that service, or interested in constructing the means in which that service is provided.



# RANGE OF DELIVERY MODELS

The scale of Public-Private Partnerships:  
Risk Transfer & Private Sector Involvement



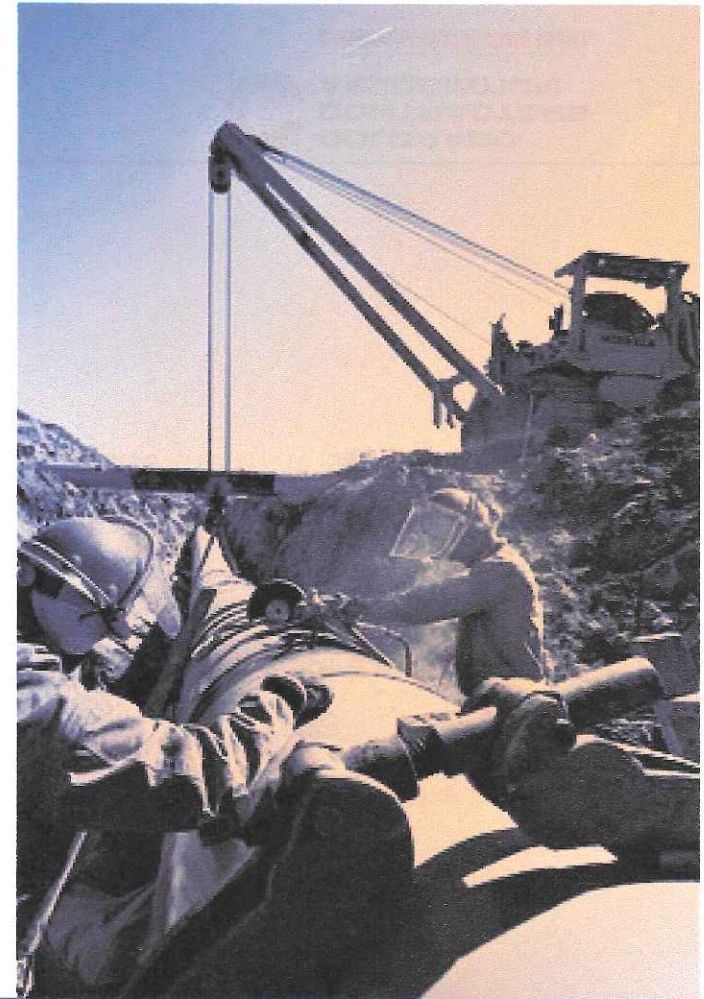


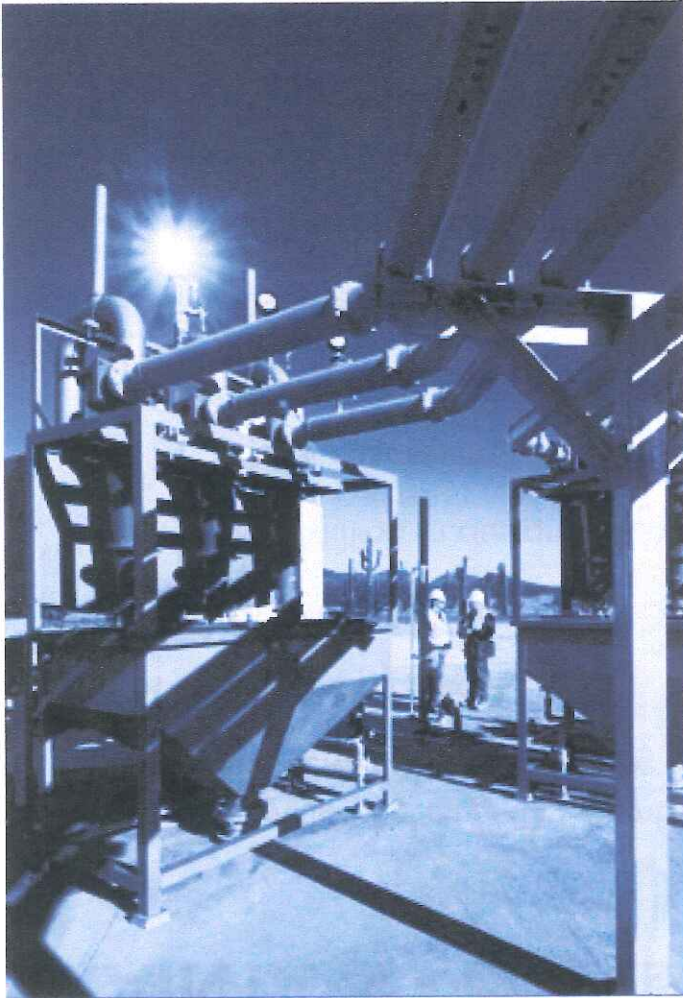
# ELEMENTS CRITICAL TO SUCCESS OF P3s

- ▶ P3-authorizing legislation to protect against roadblocks and provide assurances of a process on both the public and private side.
- ▶ P3s should not be used as a stopgap measure. Instead, governments should utilize them in such a way as to reallocate resources and risks to meet community needs.
- ▶ P3s do not provide funding, they are a different financing and procurement mechanism.
- ▶ If the community is not included in the development of a P3, they are likely to oppose them. It is important to convey the role of the private sector in the process.

# DESIGN-BUILD/DESIGN-BUILD-FINANCE - EXAMPLE

- ▶ Capacity to deliver 20 million gallons of water daily.  
58-mile pipeline.
  - \$165 Million capital cost
  - Value for Money Drivers
    - Accelerated delivery
    - Construction savings
    - Enhanced technologies



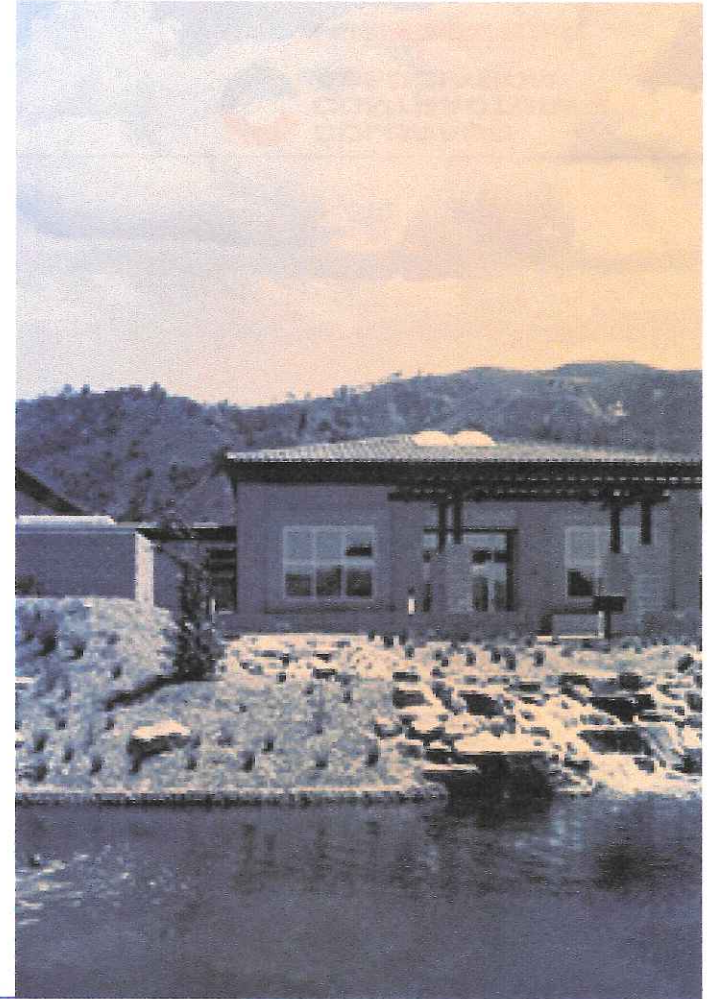


## DESIGN-BUILD-OPERATE/DESIGN-BUILD-OPERATE-MAINTAIN - EXAMPLE

- ▶ Process 80 million gallons per day (mgd). First phase of a long-term master plan to provide a robust facility that has an ultimate capacity of 320 mgd.
  - \$215 Million capital cost
  - Value for Money Drivers
    - Project acceleration (2-year savings in planning, design and construction phases)
    - Construction cost savings in amount of \$30 Million

# DESIGN-BUILD-FINANCE OPERATE- MAINTAIN - EXAMPLE

- ▶ Water Recycling Facility - The combined treatment capacity of phase 1 and phase 2 is 4.2MGD ADWF, serving a maximum population of 52,500
  - \$62 Million capital cost
  - Value for Money Drivers
    - \$18 Million in design and construction cost savings
    - O&M cost savings of \$1.8 Million per year
    - Delivery 7 months ahead of schedule
    - Reduced facility footprint by 70%
    - 30% energy consumption savings



## FIRE MOUNTAIN CANAL AND RESERVOIR COMPANY

Number of shares:	220,155.30
Number of shareholders:	488
Number of shares needed to = 1 acre foot in a 24-hr period	725

## PAONIA RESERVOIR SEDIMENT REMOVAL AND OUTLET MODIFICATION PROJECT

Capacity Reclamation in acre feet	3000
Project Budget	\$8,000,000.00

## SCENARIO 1

- ▶ Project financed by grant
- ▶ Expenses in up front engineering
- ▶ Proposal preparation can take up to 6 months
- ▶ No guarantee grant will be accepted
- ▶ Some grant opportunities only open up every 3 years

## SCENARIO 2

- ▶ Project financed by the state on schedule in 2025
- ▶ \$8,000,000 in projects costs today
- ▶ \$10,438,185 in costs in 2025 \*
- ▶ Opportunity costs

\*calculated based on a 3% inflation factor

## SCENARIO 3

- ▶ Financed by P3
- ▶ Design and build becomes the contractor's responsibility
- ▶ Project is financed, designed and completed within 30 months

## 10 YEAR TERM @ 3%

**\$9,269,831 in total load costs\***

Savings realized \$1,213,354

Costs Per Share per year	\$ 4.21
Costs Per shareholder per year	\$ 1,899.56
Cost Per Acre Foot	\$ 308.99
Costs can be divided up between user fees and shares	

\*not including origination fee

## 20 YEAR TERM @ 3%

**\$10,648,274 in total load costs\***

Savings realized \$210,089

Costs Per Share per year	\$ 2.53
Costs Per shareholder per year	\$ 1,140.90
Cost Per Acre Foot	\$ 185.59
Costs can be divided up between user fees and shares	
Opportunity Costs	

\*not including origination fee

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## CONCLUSIONS

- ▶ Any P3 requires a genuine partnership and open communications between all stakeholders.
- ▶ P3s have a role in addressing the growing need in water systems and water treatment.
- ▶ A key component to this is a clear enabling act authorizing P3s for this sort of project.