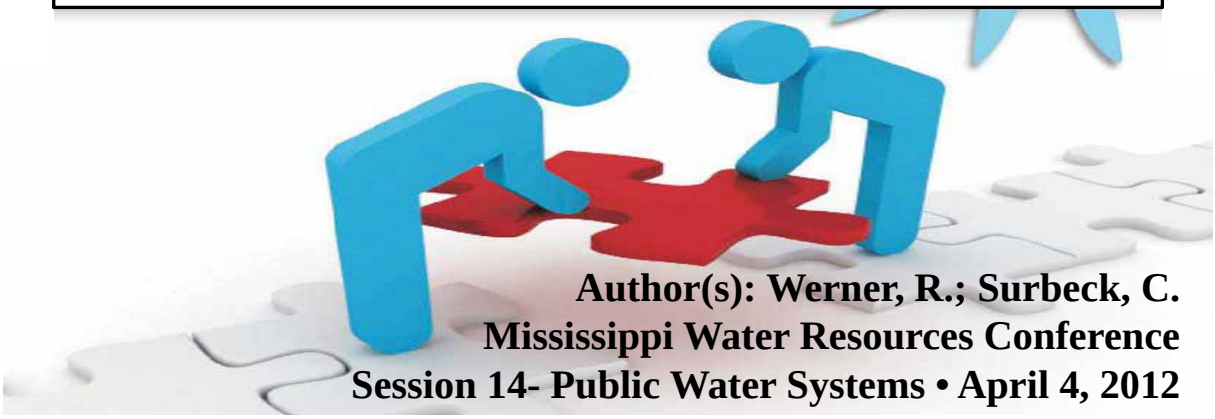
Financial Sustainability of Water Treatment and Distribution: Using a Public Private Partnership Toolkit to Evaluate Project Financial Viability



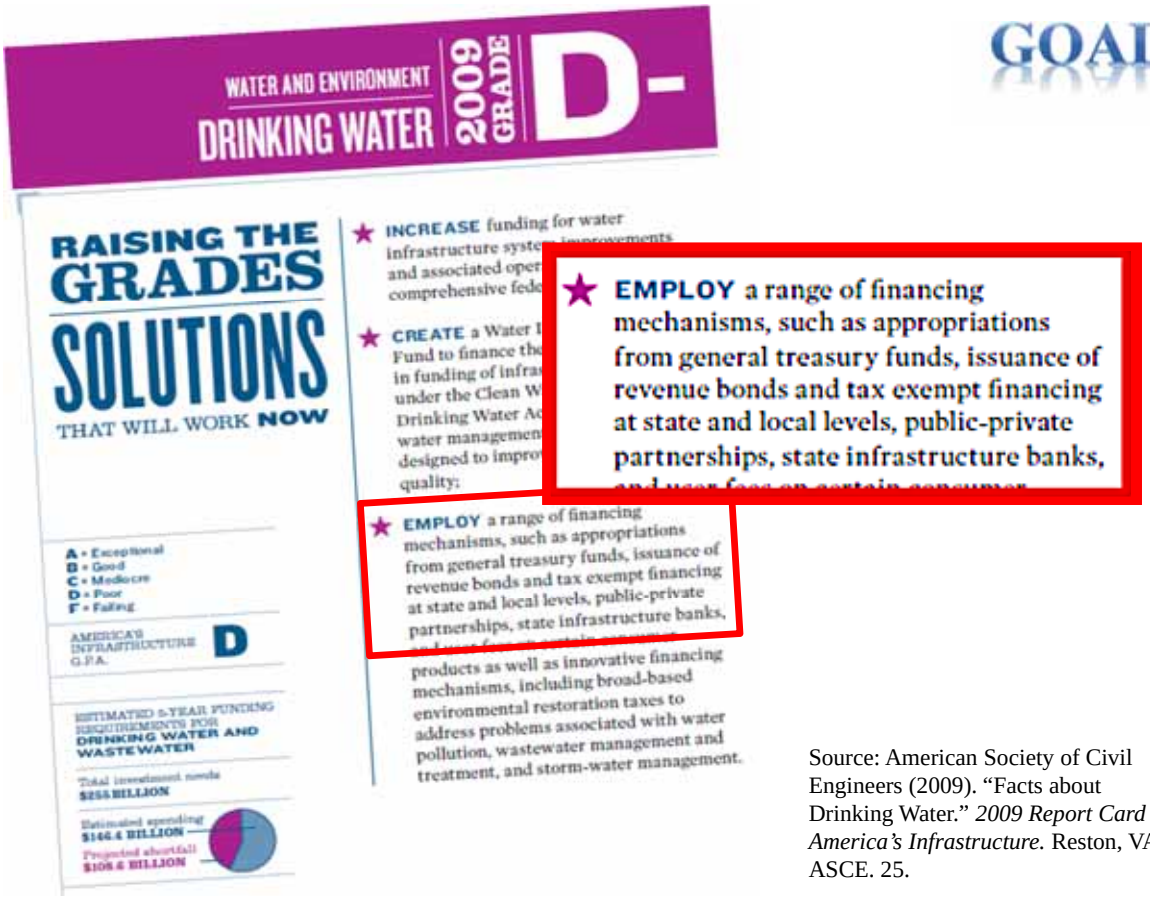
Author(s): Werner, R.; Surbeck, C.
Mississippi Water Resources Conference
Session 14- Public Water Systems • April 4, 2012

MOTIVATION

America's drinking water systems face an annual shortfall of at least $11 billion to replace aging facilities that are near the end of their useful lives and to comply with existing and future federal water regulations. This does not account for growth in the demand for drinking water over the next 20 years. Leaking pipes lose an estimated 7 billion gallons of clean drinking water a day.

Source: American Society of Civil Engineers (2009). "Introduction to Facts about Drinking Water." *2009 Report Card for America's Infrastructure.* Reston, VA: ASCE. 24.

GOAL



EMPLOY a range of financing mechanisms, such as appropriations from general treasury funds, issuance of revenue bonds and tax exempt financing at state and local levels, public-private partnerships, state infrastructure banks,

Source: American Society of Civil Engineers (2009). "Facts about Drinking Water." *2009 Report Card for America's Infrastructure.* Reston, VA: ASCE. 25.

PUBLIC PRIVATE PARTNERSHIP

Public Private Partnership (PPP) involves:

1. Relation between **government and** a **concessionaire**—one or more private companies (consortium)

2. **Agreement upon funding, building and operating** a usually government-provided service*

*In the water sector, government has been the principal supplier of water infrastructure systems

FRAME OF DISCUSSION

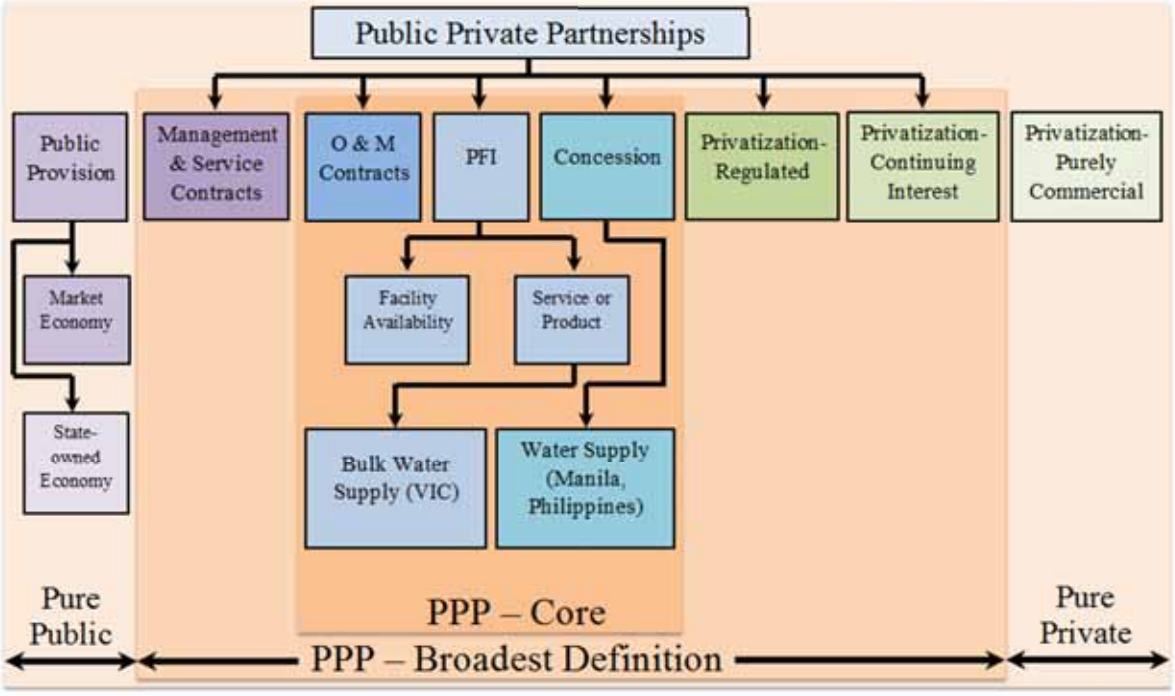
Public Private Partnership (PPP) in water treatment and distribution

How a PPP project can attract private investors

Adapting the existing Public-Private Infrastructure Advisory Facility highways toolkit model to the water sector—developing the new model in Excel

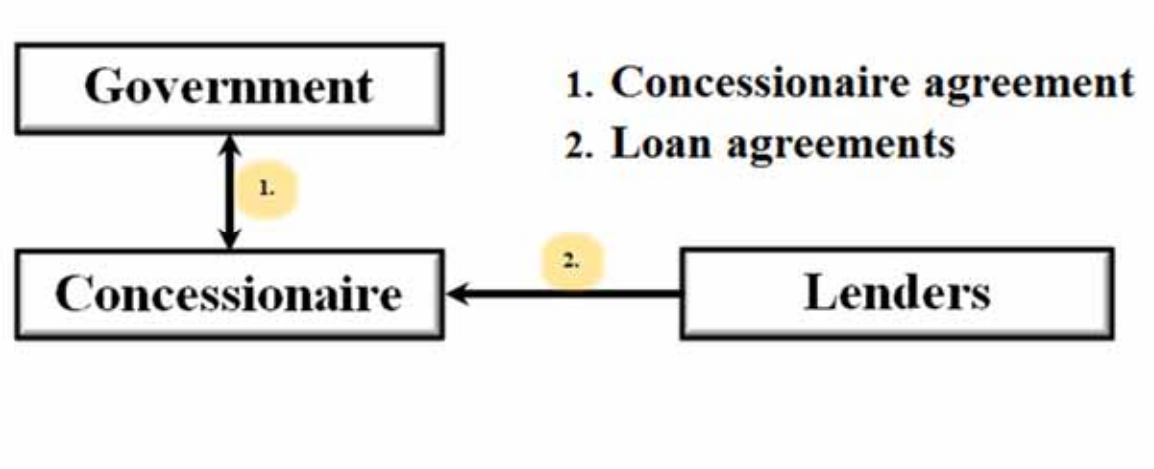
Example case study: Oxford, MS water treatment plant project

PPP FRAMEWORK



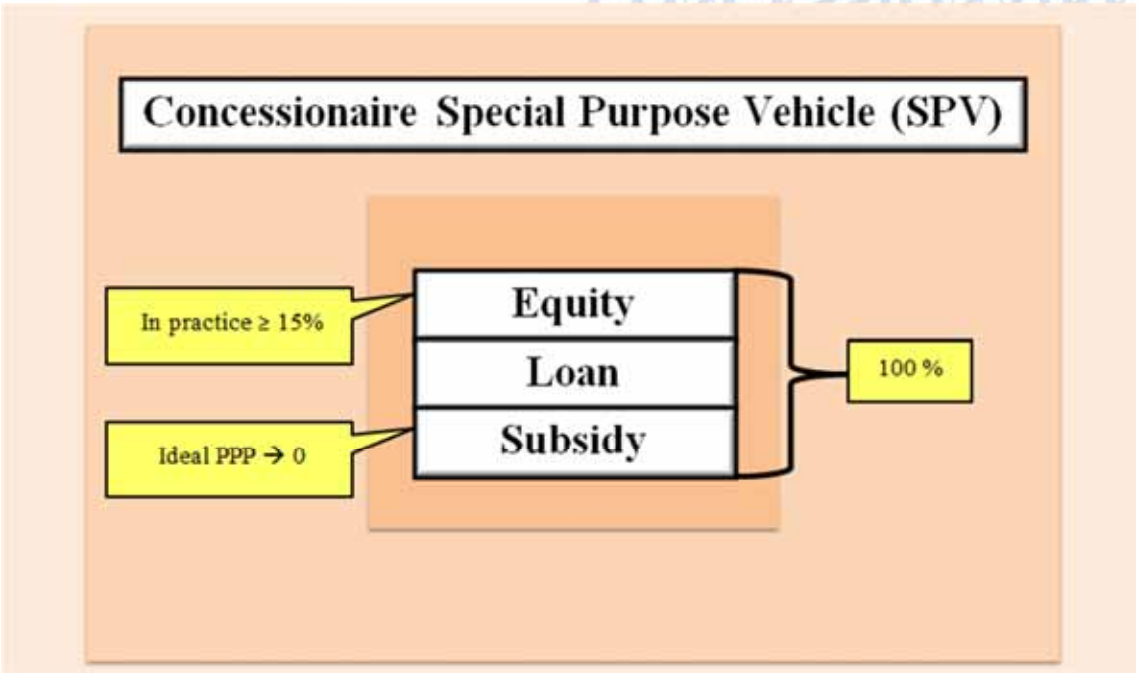
Source: Public-Private Infrastructure Advisory Facility (2010). "PPPs: An Introduction." *PPP Training Resources.* Washington, DC: The World Bank Group. 10. Modified. Accessed from http://www.ppiaf.org/ppiaf/sites/ppiaf.org/files/documents/PPIAF_Intro_to_PPPs.pdf.

SPECTRUM OF FINANCING PPP



Source: Queiroz, C. (2011). [Drawing of The World Bank Group and PPP Relationship]. Washington, DC: The World Bank Group. Modified.

CAPITAL STRUCTURE OF CONCESSIONAIRE



Source: Queiroz, C. (2011). [Drawing of Concessionaire Special Purpose Vehicle Consortium Capital Structure]. Washington, DC: The World Bank Group. Modified.

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ATTRACTION TO PRIVATE INVESTORS

Why **private participation** in water?

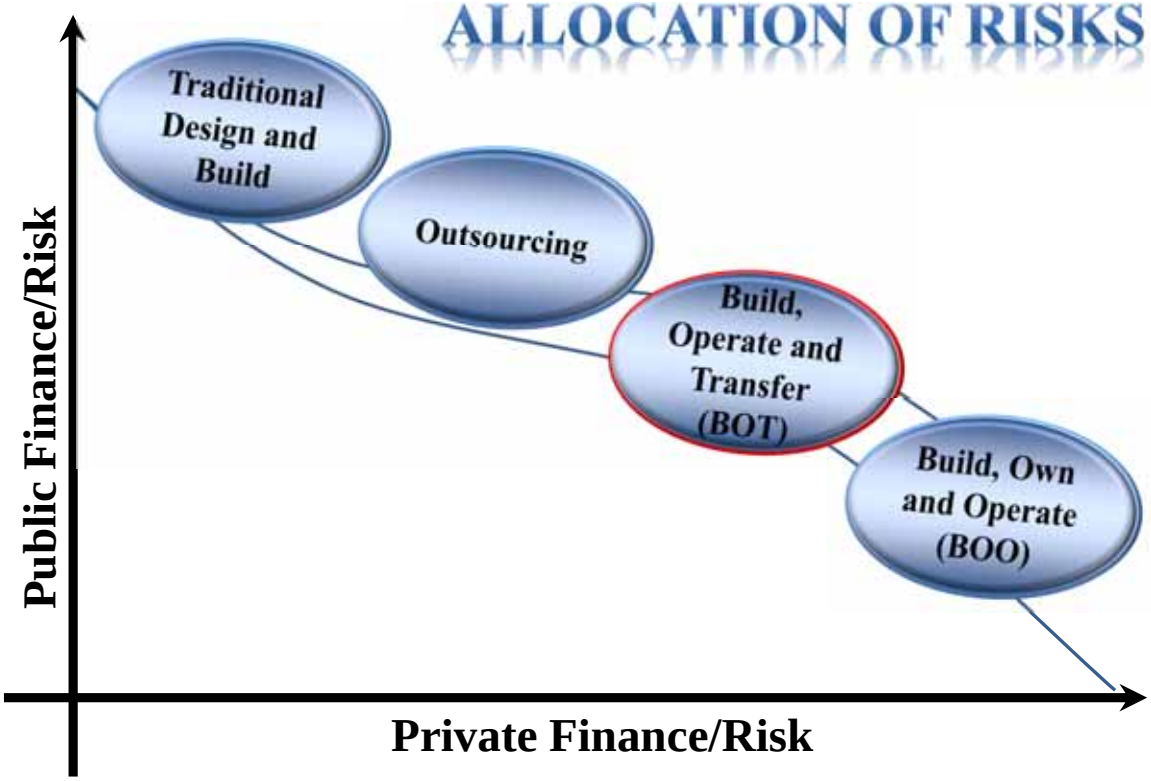
1. Wide **variation of capital investment**
2. **Appropriately shares risks** with public sector
3. Ways to assess **financial feasibility**

"The **real issue for PPP is** not public infrastructure versus private infrastructure. It is simpler: the issue is **less infrastructure versus more**."

–Clive Harris, PPP Manager of The World Bank Group

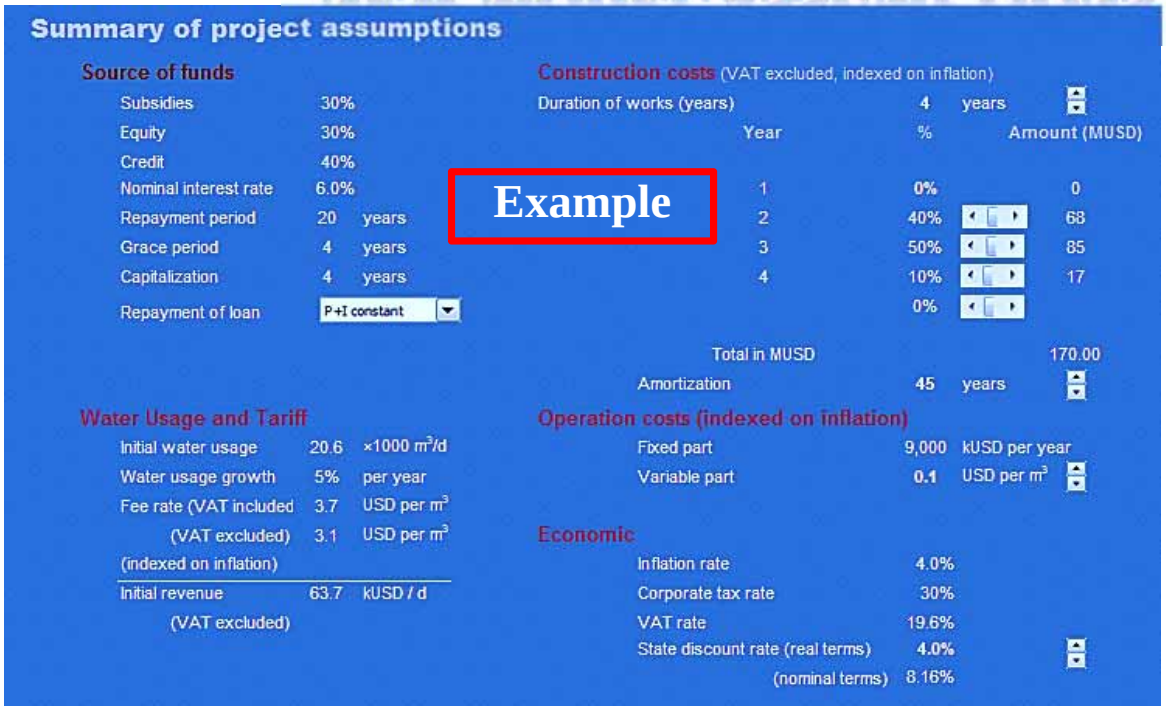
Public sector is subjected to budget constraint

ALLOCATION OF RISKS



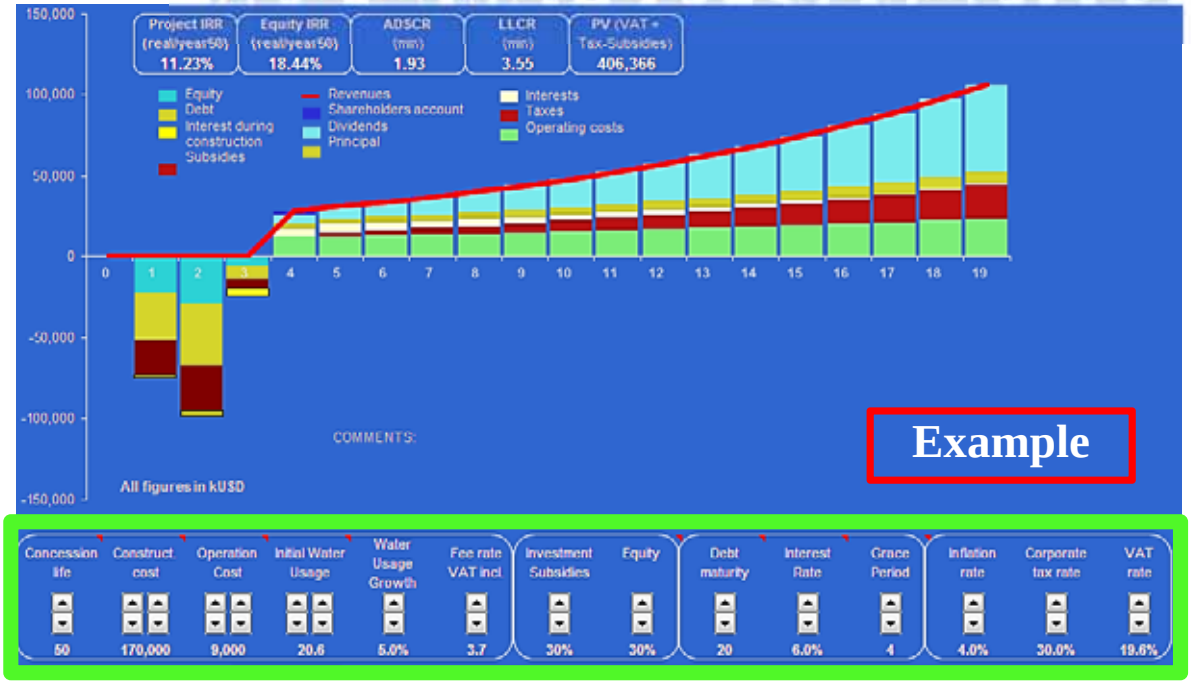
Source: Public-Private Infrastructure Advisory Facility (2010). "PPPs: An Introduction." *PPP Training Resources.* Washington, DC: The World Bank Group. 9. Modified. Accessed from http://www.ppiaf.org/ppiaf/sites/ppiaf.org/files/documents/PPIAF_Intro_to_PPPs.pdf.

NEW MODEL ASSUMPTIONS



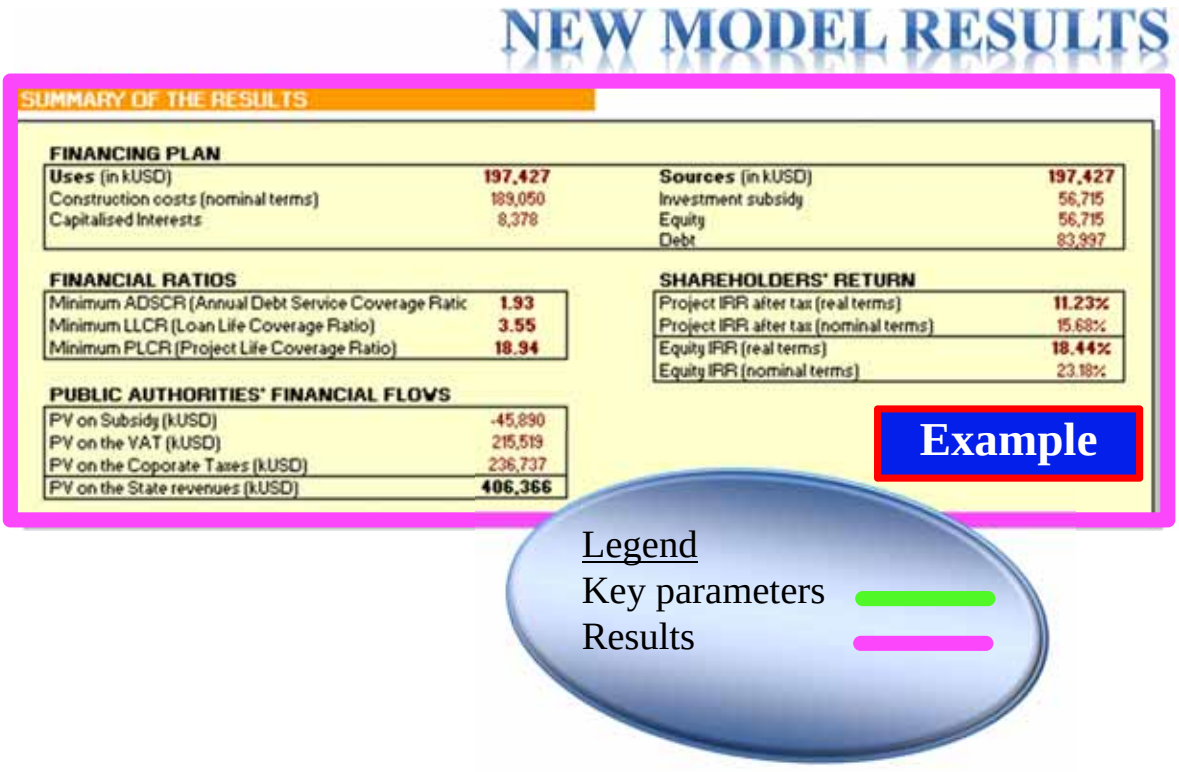
Source: PPIAF (2009). "Graphical Model for Financial Simulation of Highway PPP Projects." *Toolkit for Public-Private Partnerships in Roads & Highways, 1st Edition.* Washington, DC: The World Bank Group. 1. Modified. Accessed from http://www.ppiaf.org/ppiaf/sites/ppiaf.org/files/documents/toolkits/highwaystoolkit/6/financial_models/index.html.

NEW MODEL KEY PARAMETERS



Source: PPIAF (2009). "Graphical Model for Financial Simulation of Highway PPP Projects." *Toolkit for Public-Private Partnerships in Roads & Highways, 1st Edition.* Washington, DC: The World Bank Group. 2. Modified. Accessed from http://www.ppiaf.org/ppiaf/sites/ppiaf.org/files/documents/toolkits/highwaystoolkit/6/financial_models/index.html.

NEW MODEL RESULTS



Source: PPIAF (2009). "Graphical Model for Financial Simulation of Highway PPP Projects." *Toolkit for Public-Private Partnerships in Roads & Highways, 1st Edition.* Washington, DC: The World Bank Group. 5. Modified. Accessed from http://www.ppiaf.org/ppiaf/sites/ppiaf.org/files/documents/toolkits/highwaystoolkit/6/financial_models/index.html.

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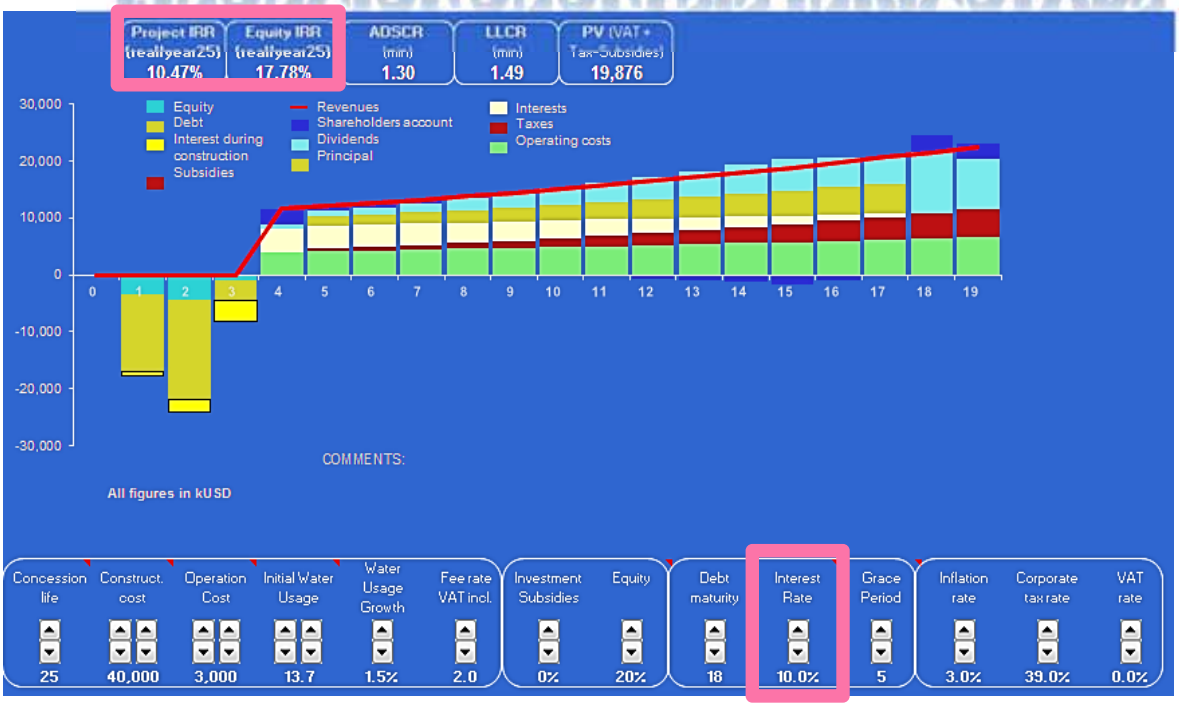
FINANCIAL ANALYSIS INDICATORS



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REFERENCES

American Society of Civil Engineers (2008). "Mississippi Key Infrastructure Facts." *Report Card for America's Infrastructure.* Reston, VA: ASCE. Accessed from: http://www.infrastructurereportcard.org/state-page/mississippi.

American Society of Civil Engineers (2009). "Introduction to Facts about Drinking Water." *2009 Report Card for America's Infrastructure.* Reston, VA: ASCE. 24.

Public-Private Infrastructure Advisory Facility (2009). "Graphical Model for Financial Simulation of Highway PPP Projects." *Toolkit for Public-Private Partnerships in Roads & Highways, 1st Edition.* Washington, DC: The World Bank Group. 1-2, 5. Modified. Accessed from http://www.ppiaf.org/ppiaf/sites/ppiaf.org/files/documents/toolkits/highwaystoolkit/6/financial_models/index.html.

Public-Private Infrastructure Advisory Facility (2010). "PPPs: An Introduction." *PPP Training Resources.* Washington, DC: The World Bank Group. 9-10, 18. Modified. Accessed from http://www.ppiaf.org/ppiaf/sites/ppiaf.org/files/documents/PPIAF_Intro_to_PPPs.pdf.

Queiroz, C. (2011). "Financial Assessment of PPP Projects: Overview and Financial Models." *Private Participation in Infrastructure Development and Finance.* Washington, DC: The World Bank Group.

Robinson, B. (2012). [Excel spreadsheet of water treatment plant example]. *City of Oxford Master Plan.* Oxford, MS: City of Oxford.

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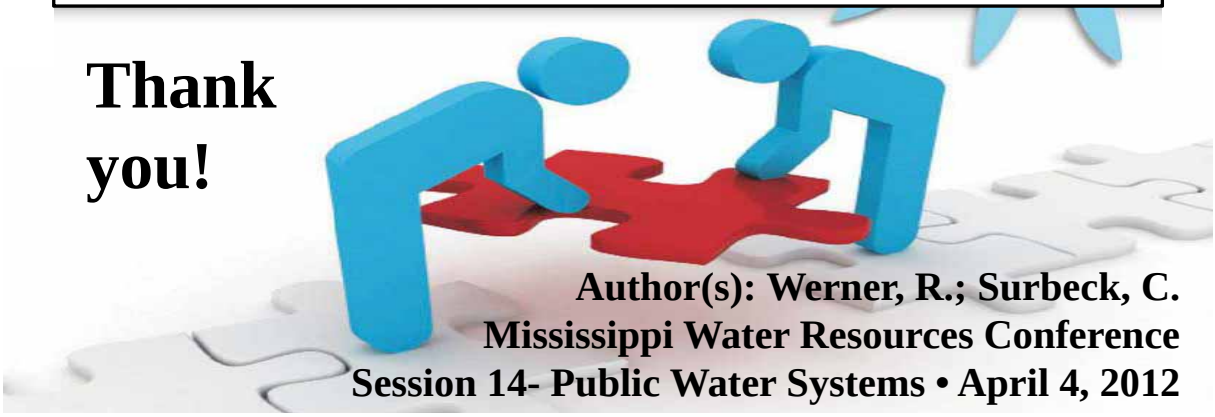
Thank you!



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