

2021 THE CONSTRUCTION ASSOCIATION CONVENTION



AGC

THE CONSTRUCTION
ASSOCIATION

**The Oroville Spillways Collapse and
Recovery**

Jeff Petersen

Kiewit
1991-present

Jon Swartzentruber

Kiewit
2006-2017

Paradyne Consulting Works LLC
2017-present



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The Oroville Spillways Collapse and Recovery

Earn CE hours for this Session

Participants must:

1. Sign in using attendance sheet in the back of the room.
2. Attend at least 95% of the session.
3. Complete the session and post-program evaluation.

Additional instructions will be emailed to attendees requesting CE credits. If requesting AIA credits, please provide your AIA number so we can report your attendance. For questions regarding continuing education credits, please contact **Jo-Anne Torres**, Manager of Professional Development and Continuing Education, at jo-anne.torres@agc.org, or (703) 837-5360.



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The Oroville Spillways Collapse and Recovery

Learning Objectives

By the end of this session, participants will be able to:

1. Examine how collaborative partnering brings the contractor, owner and regulatory agencies together as partners not adversaries on complex, high visibility projects.
2. Investigate how innovative partnering strategies such as the Four-Box Issues Matrix and Organizational Network Analysis help project management teams understand how work is really getting done and who the unsung heroes are.
3. Identify ways to bring federal and state regulators onto the project team as partners and not cops.
4. Explore how to maintain intensity, urgency and effort over an extended timeframe.



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The Oroville Spillways Collapse and Recovery

Innovative Partnering at The Oroville Spillways Collapse & Recovery



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1. What Happened



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CBS 13 CBS Sacramento

October 31, 2018 at 3:14 pm



OROVILLE (CBS13/AP) – The California Department of Water Resources met their goal of having the Oroville Dam's main spillway repaired. Officials say the spillway is now safe.

Los Angeles Times

Damage to Oroville Dam's spillway worsens as officials consider emergency measures

As millions of gallons of rushing water continued to pound and erode the massive Lake Oroville Dam spillway on Friday, dozens of onlookers gathered on a nearby hillside to catch a glimpse of the muddy spectacle.



THE TIMES



ENR
Engineering News-Record

December 7, 2017

Oroville Team Passes Milestone, Presses on With Spillway Fix



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Capitol Alert

Jerry Brown makes surprise visit to Oroville Dam



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- 1. What Happened***
- 2. How Innovative Partnering Made a Difference***

INNOVATIONS IN PARTNERING

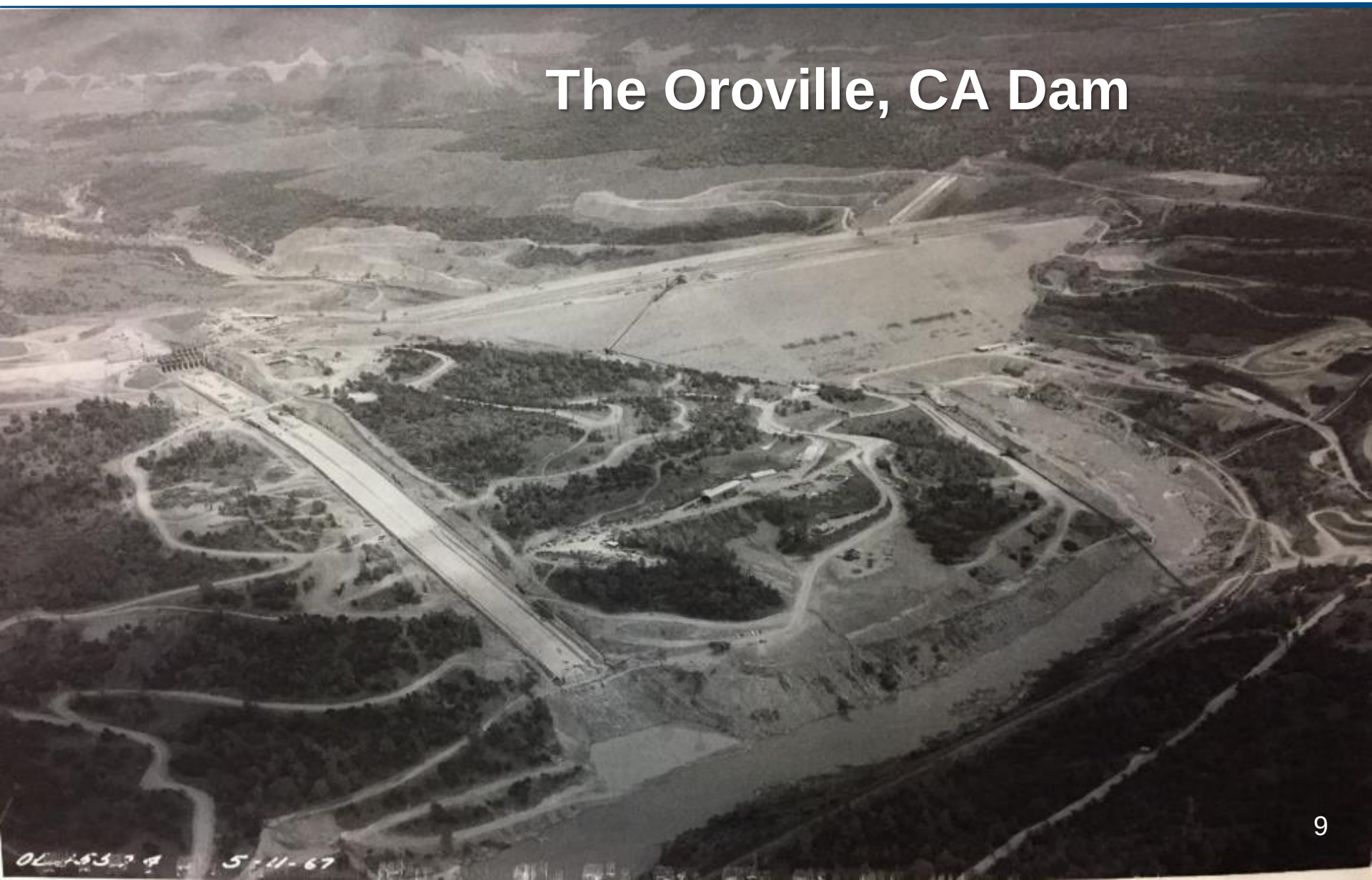
- 1.
- 2.
- 3.

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The Oroville, CA Dam



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Full in Winter ...



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... Low in Summer



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2017 - an extraordinary year



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2017 - an extraordinary year



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Strategic	DWR				KIEWIT			
	Jaanna Ruttil District Commander				Kiewit Regional Director Dave Miles District Vice President			
	Terese Engstrom (Offsite) Assistant District Engineer				Kiewit District Vice President Jamie Wassenbaker (Offsite) District Vice President			
	Ted Craddock / Terry Becker				Kiewit District Vice President Jeff Peterson (Onsite) District Vice President / Senior WFL Project Director			
Operational	Paul Struzinski District Engineer				Todd Orbus District Project Director			
	Bill Forsythe Communication and Public Outreach Liaison							
Tactical	Construction				Construction			
	Dale Brown Project Engineer Paul Struzinski District Engineer				Keith Swich Construction Manager Chuck Nyland Construction Manager			
	S. Precast/Precast				Brian Gardner Construction Manager Pete Rowington Construction Manager Dave Hazen Construction Manager			
	Structural	Steel	Reinforced Concrete	Electrical	Structural	Reinforced Concrete	Reinforced Concrete	Electrical
	James Dillon	Jim Lopez	Christine Alexander	Holly Nichols Craig Hall	Ethan Brand	Brad Halverson	Katie Kipp	Rachel Goldsmith
	Project Control Group				Project Control Group			
	John Berringer		S. Fuentes Tehachas		Russ Conettable		Mike Lee Shasta	
	Tina Becker				Chris Wiese			
	Quality Group				Quality Group			
	Tom Cobarrubias, Mark Strahm (Materials Testing) Inspector Group				David Collentine			
	Dan Ramador							
	Bruce Jones				Brandon Raso			
	Wayne Wolfe				Neil Gibson (Offsite) Junior Gutierrez (Lead) Stephen Wanderer			

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DWR	KIEWIT
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Strategic*	DWR	KIEWIT
	Jeanne Kuttel Incident Commander Teresa Engstrom (Offsite) Acting Chief Engineer	Kiewit Infrastructure Group Dave Miles Executive Vice President Kiewit Infrastructure West Jamie Wisenbaker (Offsite) District Mgr. / Senior V.P.
	Ted Craddock / Terry Becker	Northern California District Jeff Petersen (Onsite) District Mgr. / Senior V.P. Project Director
	Paul Strusinski Resident Engineer Bill Forsythe Communication level (other contractors / issues)	Todd Orbus Deputy Project Director

Tactical**

Project Controls Group		Project Controls Group	
John Berringer		S. Fuentes Schedules	Russ Constable
Tina Becker			Mike Lee Schedules
Quality Group		Quality Group	
Tom Cobarrubia, Mark Strahm (Materials Testing) Inspection Group		David Collentine	
Dan Ramsour		Chief/Grading/Excavate	Structures
			Melr Hammer (REC) Morgan Corlew (Structures)
		Inspector of	Foreman/Chief/Permitting
		Rachel Goldsmith	Stacy Halgh
Security Group		Security Group	
Bruce Jones		Brandon Rizzo	
Solidity Group		Solidity Group	
Wayne Wolfe		Neil Gibson (Offsite)	Junior Gutierrez (Lead) Stephen Wanderer

Structures	Civil/RCC/Blasting	Environmental	Geotech/Geology	Structures	Civil/RCC/Blast/Fndn.	Environmental	Plants & Crushing
Ryan Colquhoun	Joe Burke Gordon Reavy	Cassandra Evenson	Craig Hall Holly Nichols	Brent Simmons	Josh Domme	Katie Kipp	N/A
	Mike Driller					Geotech	
Project Controls Group				Project Controls Group			
Angela Hall Const. Mngmnt. Supv.	Sergio Fuentes Schedule Analyst	Greg Aleksich Cost Estimator		Bill Marshall Project Engineer		Adam Waters Sr. Cost Estimator	Bill Marshall Survey Manager
Bal Sah Contract Administrator	Pete Hagens						
Terri Gama Contract Administrator				Andrew Brownell Business Manager			
Quality Assurance and Construction Group				Quality Control Group			
Solid Flow Wayne Wolfe				Solid Flow Neil Gibson (Offsite) Junior Gutierrez (Lead) Stephen Wanderer			

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PARADYNE CONSULTING WORKS

Kiewit

OROVILLE EMERGENCY SPILLWAY RECOVERY

PARTNERING CHARTER

April 24, 2017

We the partners commit, individually and as a team to successfully design, construct and commission the Oroville Dam Emergency Spillway Recovery Project. We will proactively coordinate with each other and be flexible. We will be individually accountable for our teams' performance, and empowering them to resolve issues at the lowest practical level. As one team, we will remain focused to ensure no issue jeopardizes the achievement of our common goals. The extent of our success will be measured by our achievement of the following goals:

PROJECT GOALS

SAFETY: Nobody gets hurt (project teams or the public) through project completion. Metric: Zero Recordables.
SCHEDULE: The project will be delivered on or ahead of schedule. Metric: All agreed to milestones met.
BUDGET: All party's cost budgets will be met. Metric: At or below all cost forecasts, including agreed amendments.
DAM SAFETY: The spillway is repaired to sustain upcoming flood seasons. Metric: Available for use when needed.
PERFORMANCE: The Spillway Repair will meet all regulatory requirements.
ENVIRONMENTAL: Zero environmental compliance issues. Metric: No NOV's.
ZERO CLAIMS: Contractual issues will be resolved without resorting to the claims process. Metric: No claims.
PUBLIC RELATIONS: Keep local officials and community apprised of project impacts and progress.

PARTNERSHIP GOALS

PROMPT ISSUE RESOLUTION: We will share issues with each other as they arise, and will promptly and helpfully resolve all issues - internal or external.
OPEN COMMUNICATION: We will communicate openly and transparently, will be reliable in our words and deeds, and will earn the trust of, and extend trust to, our partners.
DECISION MAKING: We will maintain up-to-date org charts defining decision-making responsibilities, and will seek together to make all necessary decisions promptly, elevating them promptly when necessary.
MINIMIZING BUREAUCRATIC DELAYS: We will be aggressive in addressing all regulatory and bureaucratic requirements that might impact project goals with agility, speed, and collaboration.
NO SURPRISES: Any necessary changes in scope, means and methods, specifications, etc. will be collaboratively discussed and agreed to in a highly timely fashion, including anticipated cost impacts, if any.
THIRD PARTY RELATIONSHIPS: We will keep each other advised of all relevant third party issues and communications, and will not employ secretive back channels.
The metric for all Partnership Goals: 6.0 or above on a survey scale of 1-7.

We will regularly monitor our achievement of the goals listed above, ensuring that no goal is allowed to remain unmet.

By accomplishing these goals we provide value to our community, our partners, and our stakeholders. We will collectively enhance the knowledge, experience and reputation for excellence of the entire team. We will develop our people while establishing a desire to work together again. We will demonstrate pride in a job well done.

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PROJECT GOALS

SCHEDULE: The project will be delivered on or ahead of schedule. *Metric: All agreed to milestones met.*

BUDGET: All party's cost budgets will be met. *Metric: At or below all cost forecasts,*

ZERO CLAIMS: Contractual issues will be resolved without resorting to the claims process. *Metric: No claims.*

PROMPT ISSUE RESOLUTION: We will share issues with each other as they arise, and will promptly and helpfully resolve all issues – internal or external.

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ATTACK PLAN TASK FORCES AND MEEETINGS

Which task forces should be formed? Who should be on them? What is their specific objective? What will the meeting schedule be?



ATTACK PLAN SUBMITTALS AND APPROVALS

Timeliness expectations for submittals and approvals (RFIs, Field Changes, etc.), and what's necessary from both parties to make that happen



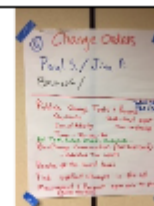
ATTACK PLAN SPEC CHANGES

How to ensure that we come to resolution quickly when spec changes are necessary



ATTACK PLAN CHANGE ORDERS

How to achieve clarity and agreement on changes as they come up on any items with a dollar impact, so that there are no surprise



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INNOVATIONS IN PARTNERING

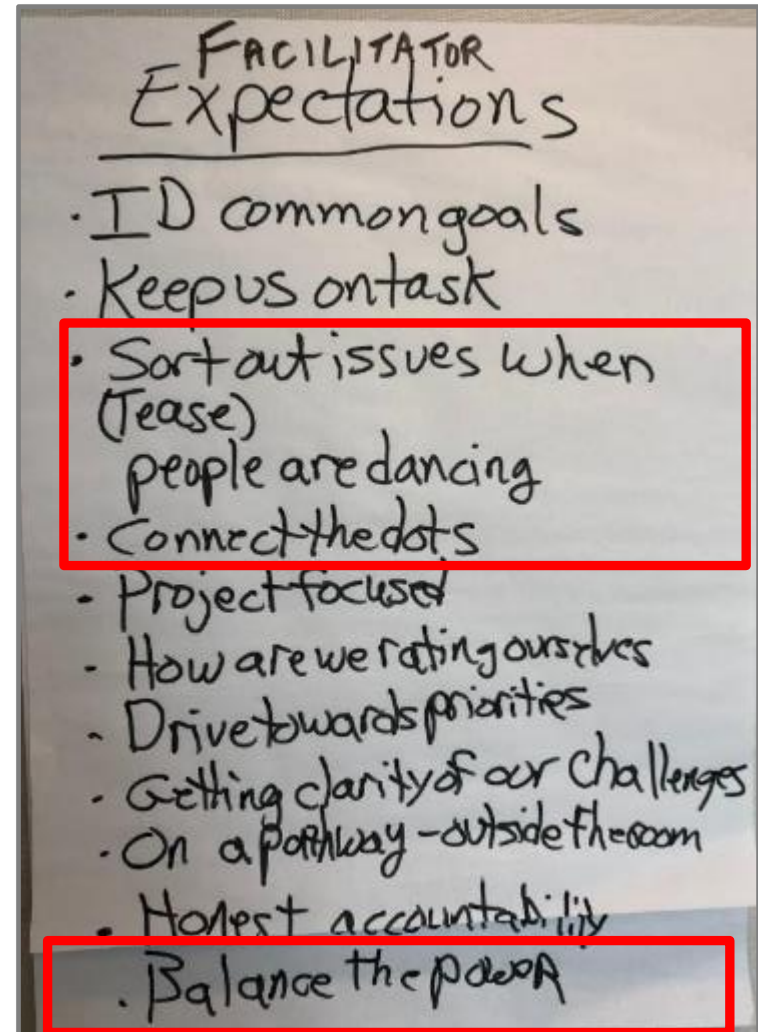
1. Empower the Facilitator
- 2.
- 3.

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INNOVATIONS IN PARTNERING

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Oct 10, 2017

Oroville Dam Spillway Recovery Executive Partnering Agenda; Oct 10, 2017

Agenda:

9:	DWR		KIEWIT	
1	Dale Brown	Project Engineer	Chuck Nylund	Ops Manager
2	Terry Becker	Chief, Const. Branch	Todd Orbus	Deputy Project Director
10:	Jeanne Kuttel	Incident Commander	Jeff Petersen	Project Director
3	Ted Craddock	Project Manager	Jamie Wisenbaker	Executive Sponsor
4	Paul Strusinski	Resident Engineer	Keith Sasich	Ops Manager
			FERC / DSOD	
			Douglas Boyer	Chief, Dam Safety, FERC
			Sharon Tapia	Chief, DSOD
			Mutaz Mihyar	DSOD
			Kathleen Bensko	FERC
			Frank Blackett	FERC
			Bruce Brand	FERC
			Jim McHenry	FERC

INNOVATIONS IN PARTNERING

1. Empower a Facilitator
2. Include outside parties
- 3.



DSOD Coordination	Who's responsible
The right representatives from Kiewit will attend the DSOD pre-construction meeting	Todd O, Dale B
Meeting Initial Drill and Blast Schedules	Who's responsible
Qualified, trained individuals to man	Chuck N
Approve one outstanding submittal (2-3 sentence adjustment)	Dale B
Asbestos abatement approval – upper (weather related)	Ted C
Drilling and blasting plan approval (final DWR item) ✓ Lower approved ✓ Upper still to go	Mike

A	Issue: Design Detail – Approvals
----------	---

Decisions or Actions Needed	Who	When
-----------------------------	-----	------

- | | | | |
|---|--|--|--|
| 1 | Design detail and approvals needed: <ul style="list-style-type: none">A. Lower connection (RCC to structural concrete)B. Upper connection (RCC to structural concrete, structural concrete to existing) | | |
|---|--|--|--|

B	Issue: Visibility of short term (daily) activity schedules and inspection requirements
----------	---

(Inspections scheduled, locations not ready, locations ready, inspectors somewhere else, may take all day to accomplish 90 minutes worth of inspection work. Would be great if the "next day inspection schedule" could be delivered by 3pm vs. 8pm)

D	Issue: Timely resolution of changes
----------	--

Action	Who	When
--------	-----	------

- | | | | |
|---|--|------------|---------|
| 1 | Track timing of the process on Todd's 2 charts | Kiewit/DWR | Ongoing |
|---|--|------------|---------|

E	Issue: RCC Aggregate Source
----------	------------------------------------

Action	Who	When
--------	-----	------

- | | | | |
|---|---|------------|------|
| 1 | Kiewit to provide analysis in writing, allowing decisions to be made now, rather than later when it has become a crisis | Kiewit/DWR | 8/31 |
|---|---|------------|------|

What Kiewit will do ...

- 1 Work closely with Dale to streamline the question & answer process related to submittals
- 2 Insure the right resources are devoted to preparing timely submittals
- 3 Get pre-construction meetings on the schedule
- 4 Forecast the

What DWR

- 1 Summarize
- 2 Work with K
- 3 Clarify what
- 4 Submit sum

	Action Commitment Scorecard		
	Set	Done	Percent
Kiewit	24	23	96%
DWR	30	28	95%
FERC	15	14	97%
DSOD	11	10	92%

What FERC will do ...

- 1 Continue to streamline
- 2 Clarify and explain our
- 3 Anything we can do w

INNOVATIONS IN PARTNERING

1. Empower a Facilitator
2. **Include outside parties**
- 3.

What DSOD will do ...

- 1 Participate in all pre-construction meetings

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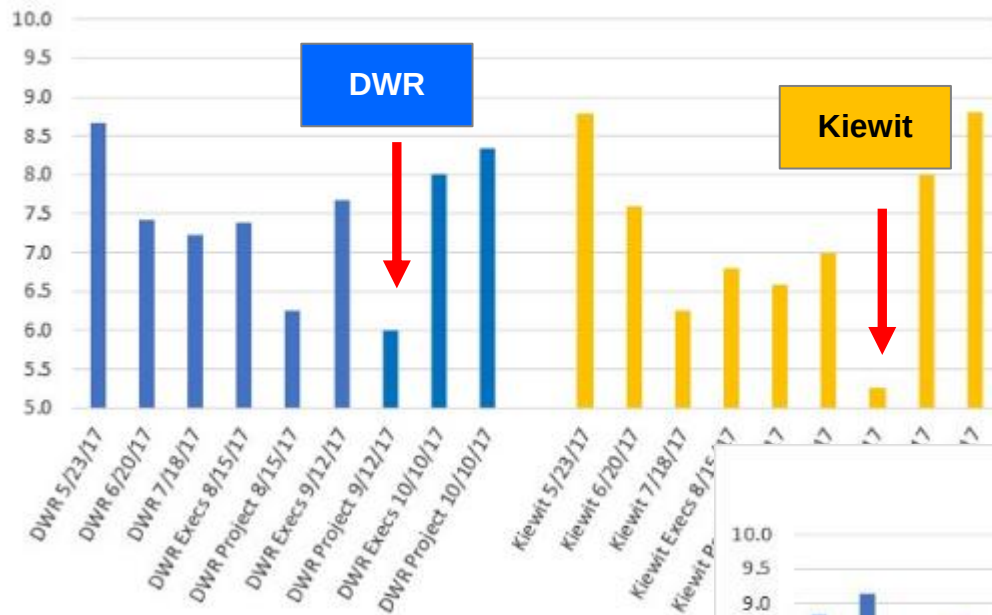
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INNOVATIONS IN PARTNERING

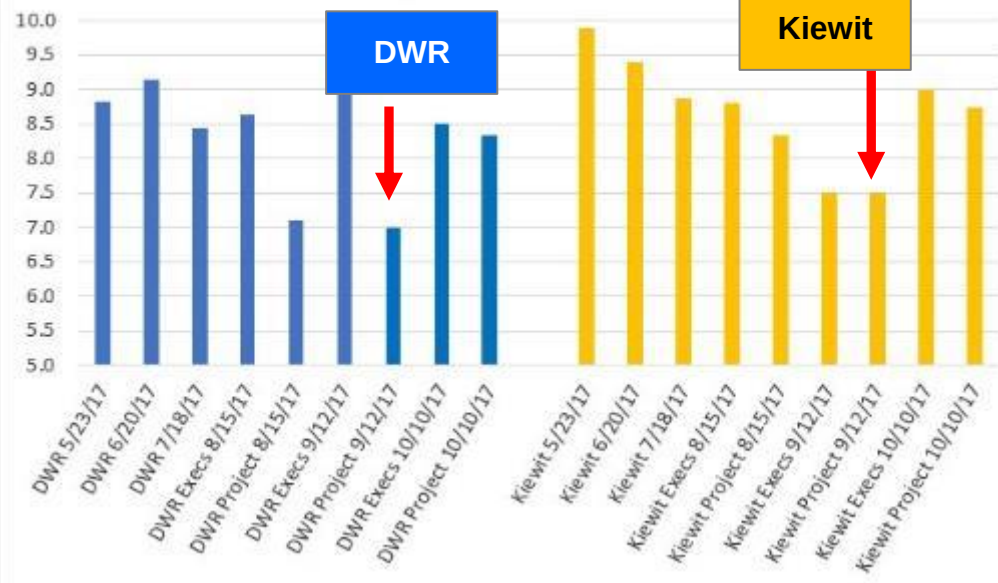
1. Empower a Facilitator
2. Include outside parties
3. **Know What's Really Going On**



Schedule



Open Communications



What is the **most important issue** to address in the next 30 days?

Issues

1. **DESIGN** – Final design details and approval for this season, RCC chute design
2. **SCHEDULE** – 2017 sequence and schedule, P6 updated, making production rates, coordination of planned activities
3. **CHANGES** – all the changes ... resolving 17

DWR

Kiewit

FERC/DSOD



Size = how many identified this issue as the most important one

Urgency

WHO'S RESPONSIBLE TO SOLVE THE ISSUES?

1. **DESIGN** – FERC/DSOD 100%; DWR & Kiewit 80%
2. **SCHEDULE** – Kiewit & DWR 100%; FERC/DSOD 60%
3. **CHANGES** – Kiewit & DWR 100%;

Difficulty

What is the **most important issue** to address in the next 30 days?

Issues

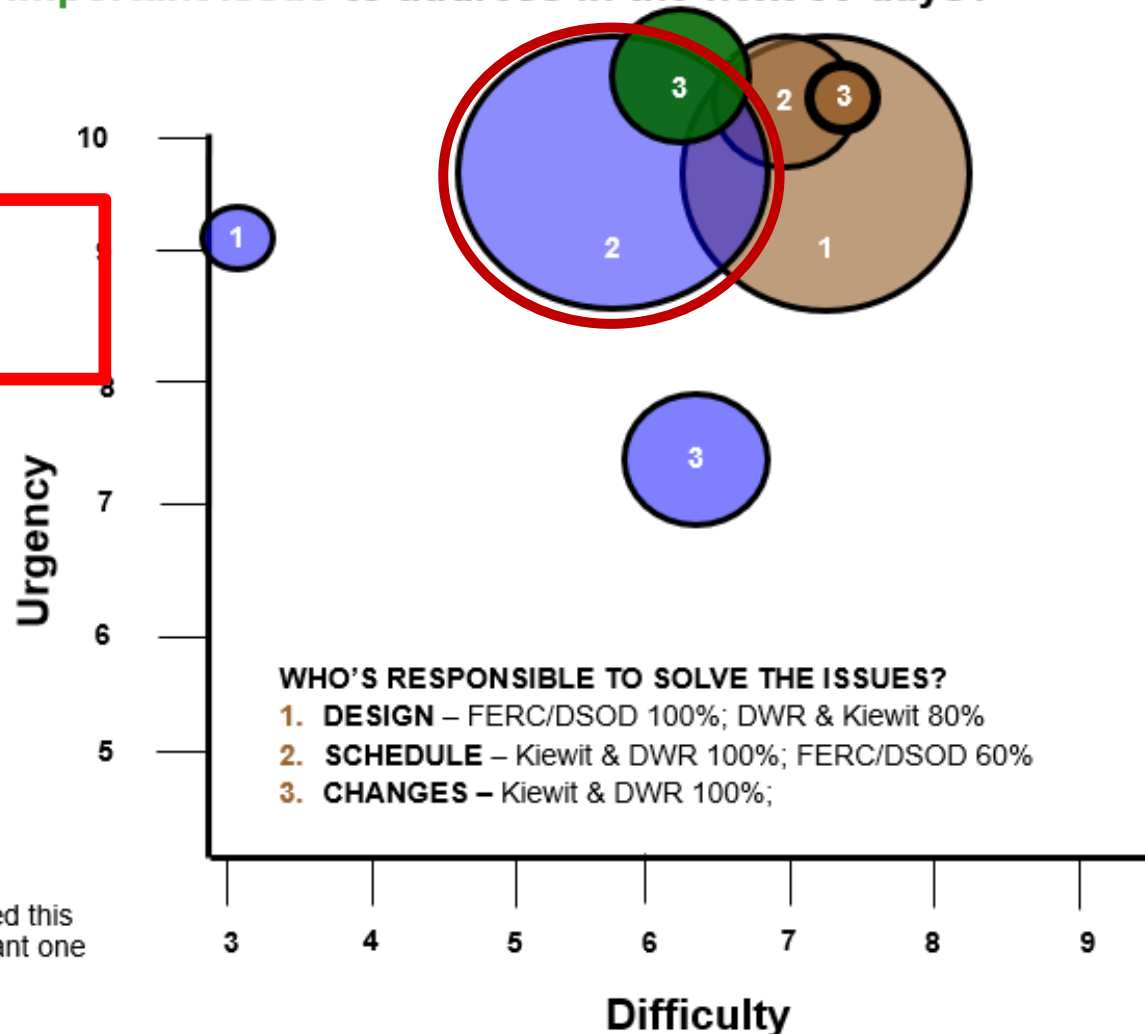
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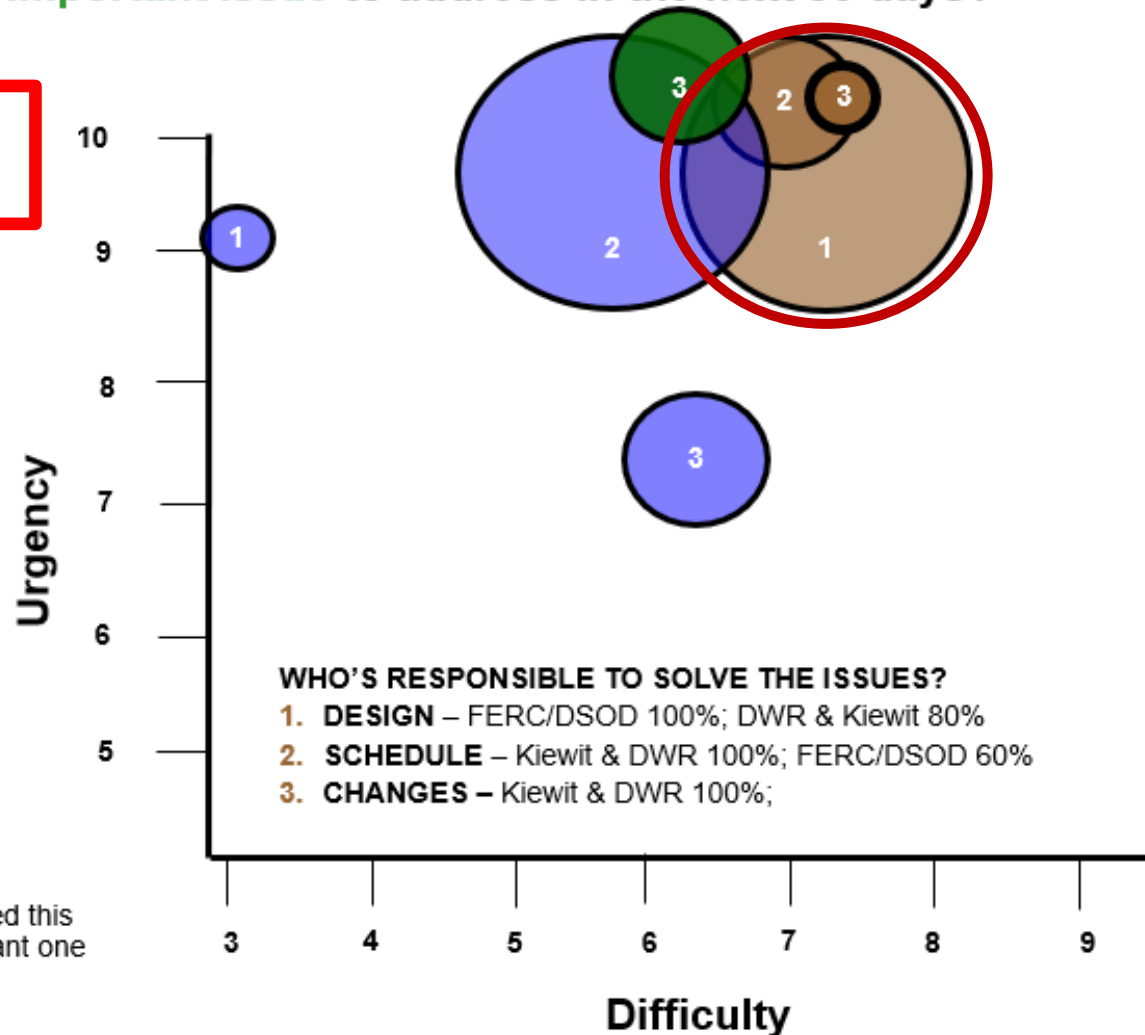
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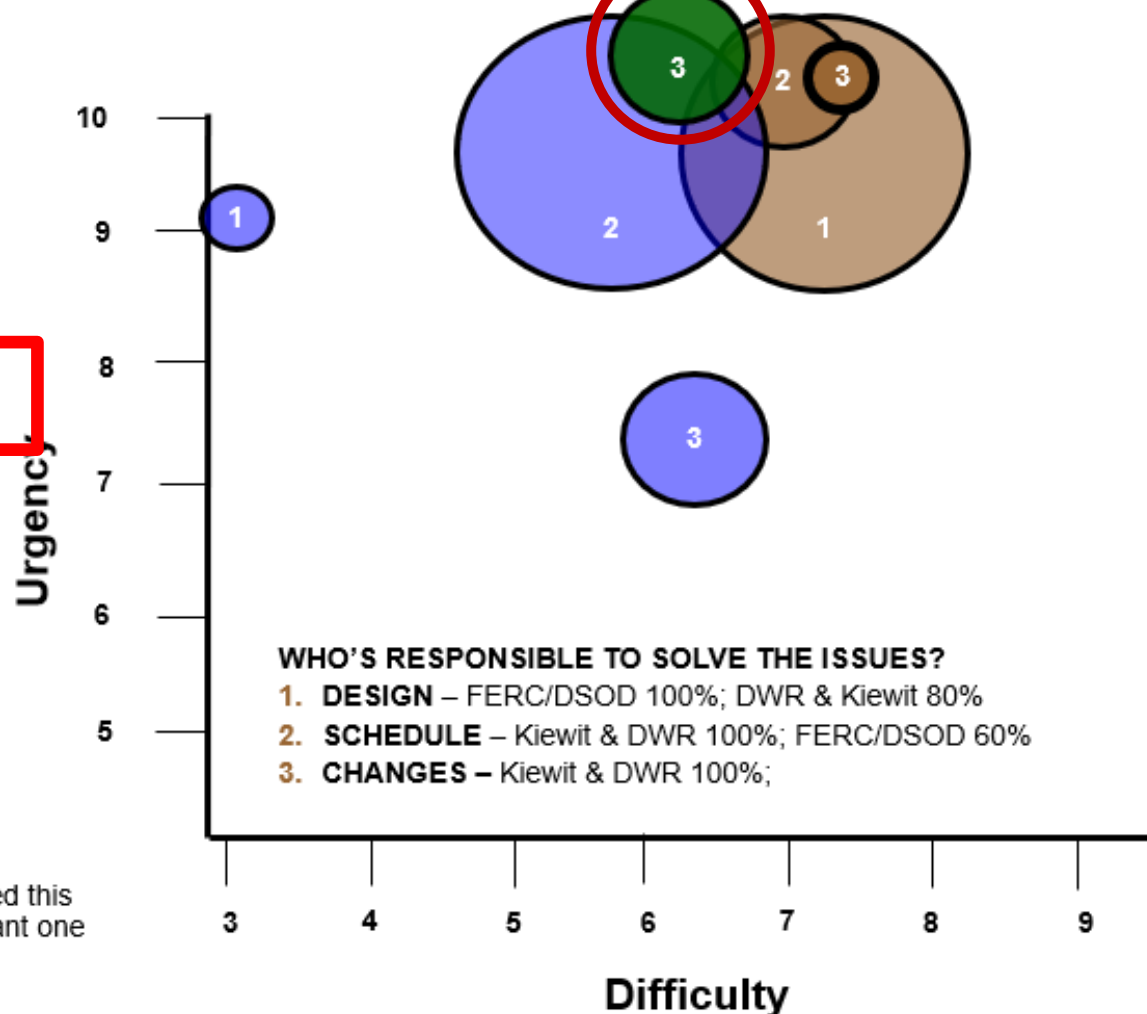
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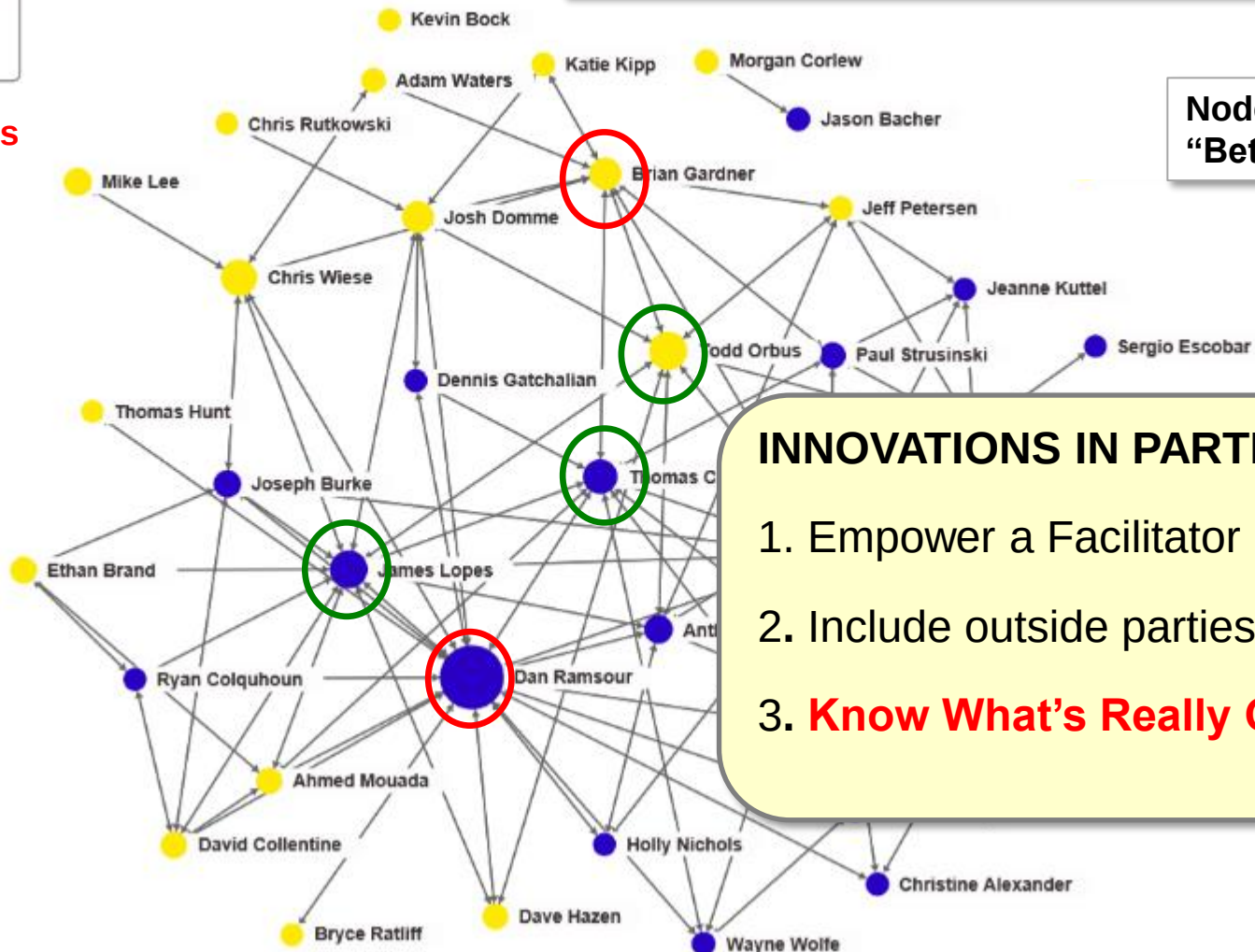
@ Organization

● DWR

● Kiewit

Connectors

Brokers



Issues and Problems

Who do you regularly and productively collaborate with to address project issues and solve problems?

Node Size =
“Betweenness”

INNOVATIONS IN PARTNERING

1. Empower a Facilitator
2. Include outside parties
3. **Know What's Really Going On**

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Petra Nova Carbon Capture
NRG Energy



Inter-Miami Soccer Stadium
Major League Soccer



The New Seattle Center
National Hockey League



Perigrino FPSO
Statoil / Maersk

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ENR's Top 25 Newsmakers 2018

ENR
Engineering News-Record

Todd Orbus: Navigating a Complex Spillway Reconstruction in California From Pre-Bidding to Early Completion



ENR's 2017 Top 25 Newsmakers

Led Sprint to Repair Oroville Spillway Before Winter Rains

ENR
Engineering News-Record



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