



A CONTRACTOR'S PERSPECTIVE: **The Good, the Bad *and the Ugly***



NATIONAL BRIDGE PRESERVATION PARTNERSHIP CONFERENCE 2018

PRACTICES WE CAN NOT AFFORD TO DEFER



THANK YOU!

Kurt Clink

President | CEO



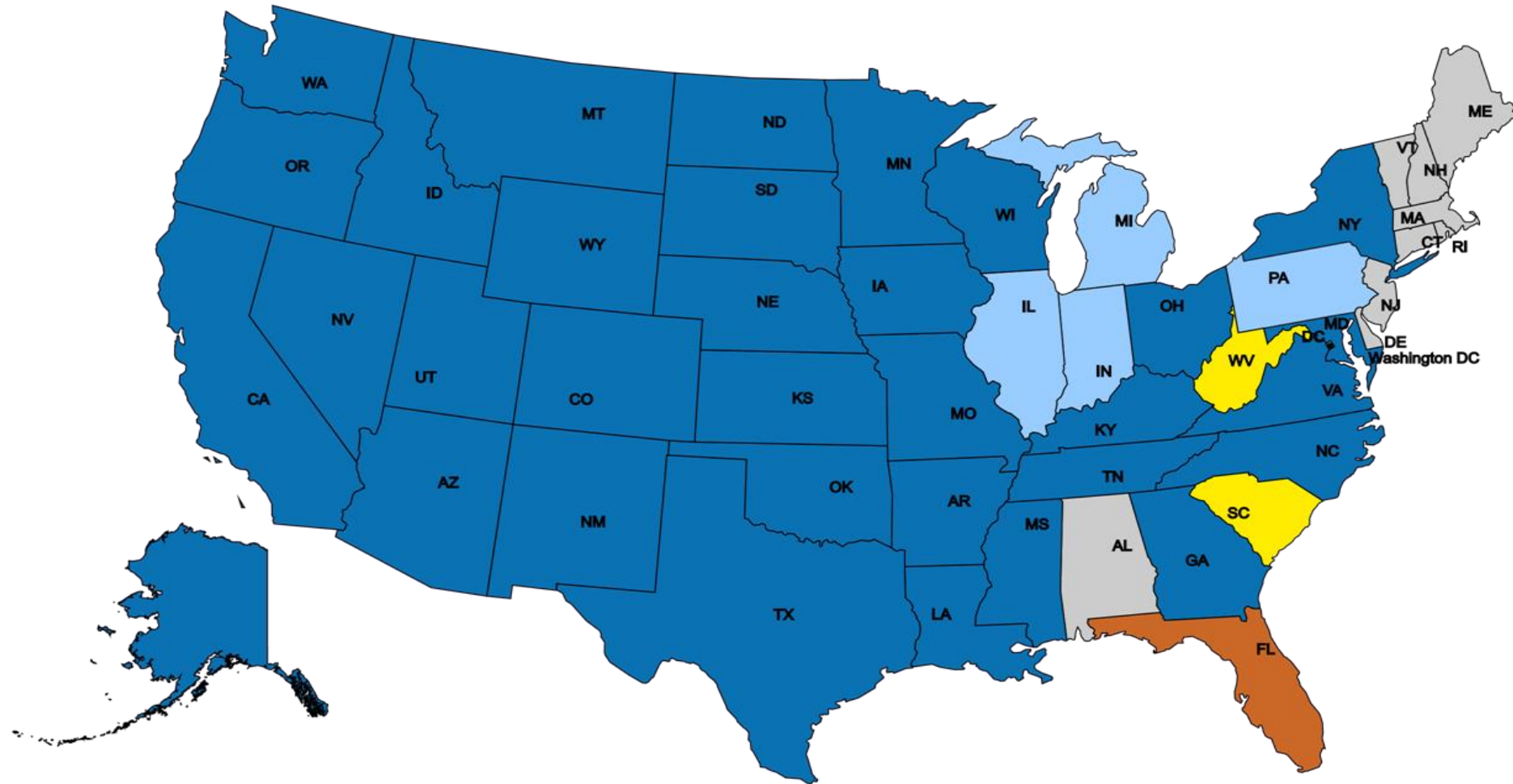
I am here to...

Honesty in our words

Excellence in our craft

Leadership from our people

Passion for a positive result.





Relevance and Focus

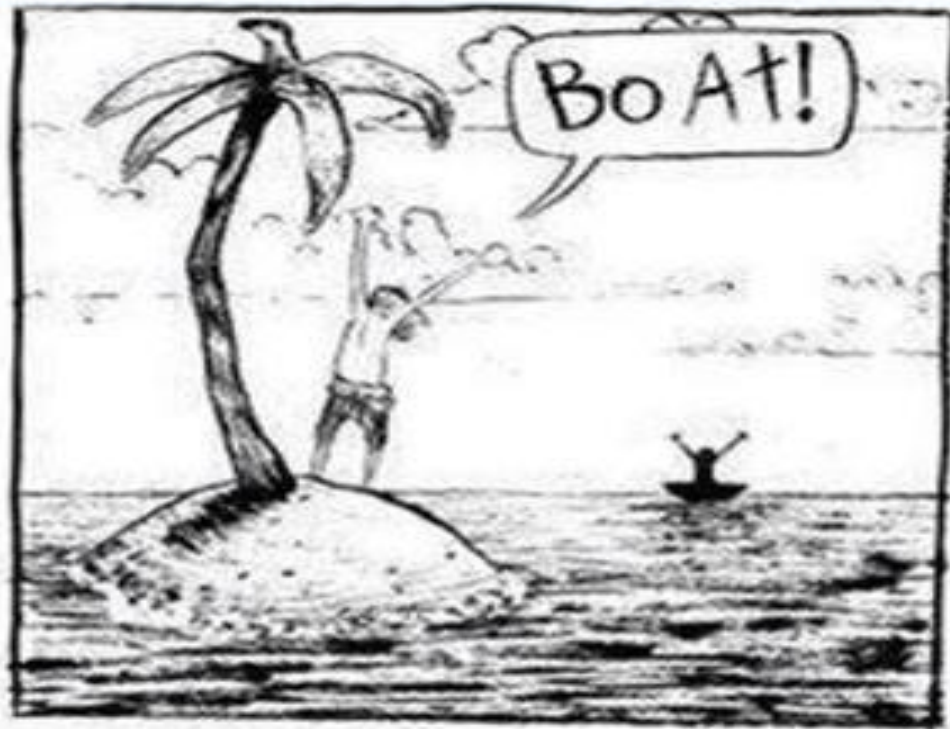
Repair, Restoration, Strengthening, Protection & Maintenance (of concrete)

Bridge Superstructure (decks, rails, girders, etc.)

- Repair, retrofit, strengthening
- Joints, deck and barrier spalls
- **Bridge Deck Overlays**
 - Healer/Sealer (Methacrylate/LV Epoxy)
 - Epoxy/MLO
 - Polyester Concrete Overlays

Bridge Substructure (foundations, piers, etc.)

- Repair, retrofit, strengthening
- Bearings



Perspective...



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Increase the amount of repairs your DOT can complete without spending another dollar.

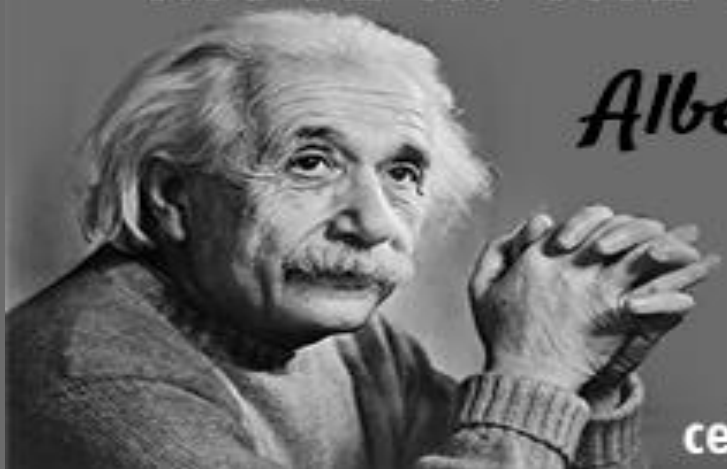
Owner - Contractor Relationships

- Basis is a Contract (litigious)
- Starts with a Bid
- It is about **risk transfer/ownership of risk**
- **Risk = Cost**

How can you design and bid your projects to ***reduce the cost*** to the owner?

Key is to remove unnecessary *risk* to the contractor.

ANY INTELLIGENT FOOL
CAN MAKE THINGS BIGGER
AND MORE COMPLEX...
IT TAKES A TOUCH OF **GENIUS**
AND A LOT OF COURAGE TO
MOVE IN THE OPPOSITE DIRECTION



Albert Einstein

celebquote.com



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The background of the slide is a photograph of a desert landscape. In the foreground, there's a concrete bridge structure. Behind it, a steep, rocky hillside rises, covered in reddish-brown soil and sparse green desert vegetation. The sky is clear and blue.

Owner - Contractor Relationships Delivery Method

Traditional

- Design - Bid – Build (contractual)

Alternative (2 Examples)

- Design/Build (D/B, CMAR,...relational)
- Job Order Contracts (JOC....RFQ vs RFP)

Key is to match the delivery method with the job.

Owner - Contractor Relationships

Prequalification Practices

Criteria should yield desired result

- **By Project** (if not at DOT level)
- **Financial limits**
 - Ensure formulas make sense
 - Ensure it relates to “Capable” (avoid opposite effect)
 - Bond requirement (diminishes need)
- **Prior Experience**
 - Relevant, but not identical
 - Too many classifications

Key is to achieve the **best value**, which requires an **adequate number of capable bidders**.

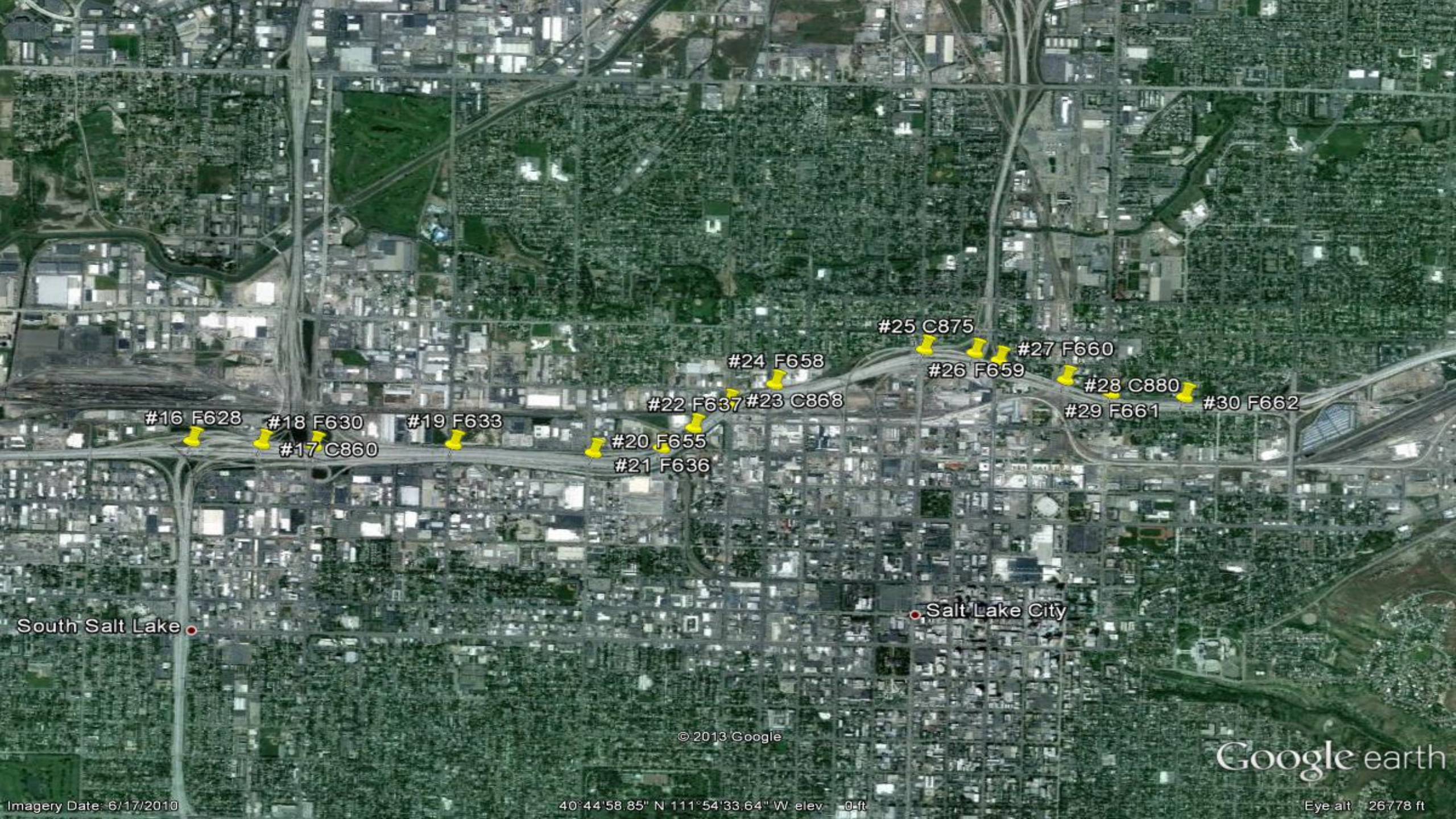


Owner - Contractor Relationships

Packaging / Bundling

- **Overall Project Size** (financially)
Bigger is better
- **Geography/footprint of locations**
Smaller is better (clusters)
- **Scope(s) of Work**
Single or few vs many
Primary is *primary* (determines Prime)
- **Working Hours**
Days OR nights, (think shifts for a crew)

Key is to PLAN the projects intentionally.



#16 F628

#18 F630
#17 C860

#19 F633

#20 F655
#21 F636

#22 F637 #23 C868

#24 F658

#25 C875

#26 F659

#27 F660

#28 C880

#29 F661

#30 F662

South Salt Lake

Salt Lake City

© 2013 Google

Google earth

Imagery Date: 6/17/2010

40°44'58.85" N 111°54'33.64" W elev 0 ft

Eye alt 26778 ft

Owner - Contractor Relationships

Project Duration (scheduling)

- Working Days vs Completion date
 - some flexibility is better
 - float = flexibility = attractiveness**
- Short contract days costs more
 - not due to acceleration
 - due to “fit” (Tetris game)
 - float = flexibility = attractiveness**
- Incentives work
 - A+B not so much (dis-incentive)
 - Completion date OR work days



Owner - Contractor Relationships

Closure “work” Schedules

- Cost AND Safety factors
- TOTAL Costs not always clear
 - some flexibility is better
 - float = flexibility = attractiveness
 - (More bidders and more aggressive bids)

Key is to consider **ALL** costs, over time.

Closure “work” Schedules EXAMPLE

- Proposed closure is 11pm – 5am
6 hours
 - .5 hour traffic setup
 - 1 hour work**
 - 4 hour cure (or more...specified!)
 - .5 hour traffic take down
- Proposed closure is **10pm** – 5am
7 hours
 - .5 hour traffic setup
 - 2 hours work**
 - 4 hour cure (or more...specified!)
 - .5 hour traffic take down

Closure “work” Schedules EXAMPLE


- 6 hours = 1 hour to work
8 hours of pay for union crew & equip
1 traffic closure
5,000 SF “treat/overlay” (5ksf/hr x 1)
\$10,000 cost = \$2/SF (labor & equip)
- 7 hours = 2 hours to work
8 hours of pay for union crew & equip
1 traffic closure
10,000 SF “treat/overlay” (5ksf/hr x 2)
\$10,000 cost = \$1/SF (labor & equip)

A small change in closure hours can
double the cost of the work!

Closure “work” Schedules EXAMPLE

- 6 hours = 1 hour to work
8 hours of pay for union crew & equip
1 traffic closure
5,000 SF “treat/overlay” (5ksf/hr)
50ksf total = **10 days**
- 7 hours = 2 hours to work
8 hours of pay for union crew & equip
1 traffic closure
10,000 SF “treat/overlay” (5ksf/hr)
50ksf total = **5 days**

**A small change in closure hours can
double the **TIME** for the work!**

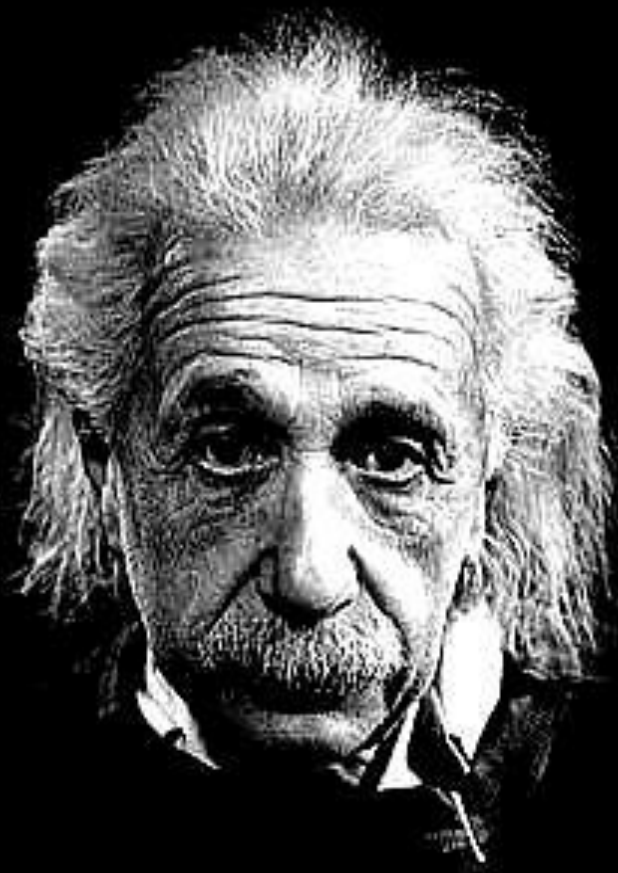


Owner - Contractor Relationships

Closure “work” Schedules

- Cost AND Safety factors
- Costs not always clear
 - some flexibility is better
 - float = flexibility = attractiveness
- Another hour or two can **cut costs by 50%**
- Another hour or two can **cut days by 50%**

What is truly **safer** and
more **cost effective**?



“Make everything as
simple as possible,
but not simpler.”

—Albert Einstein



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The background of the slide is a photograph of a large bridge under construction in a deep canyon. The bridge has multiple concrete piers and spans across the canyon. The sky is clear and blue. The canyon walls are rocky and brown. The bridge is the central focus of the image.

Owner - Contractor Relationships

Bid Schedule (Items)

- Efficient number
 - +/- 20-30 BI's work well for projects \$100k- \$5MM (more for larger)
 - too few = “incidental” or weighted avg's
 - too many = more cost
 - loss of synergy
 - administrative costs
 - Harder to lower bid on bid day

Key is to match the complexity of the **BID** with the complexity of the **PROJECT**.











Owner - Contractor Relationships

Contingency Bid Items

- **Establish a Unit Price (risky)**
unknown quantity drives prices up
unknown location(s) drives prices up
- **“Allowance” Items (fair)**
Force Account
Lump sum place holders

Don't let an ancillary item dictate who is awarded.



Owner - Contractor Relationships

Costly Contract/Spec Req'ts

- Risky

Risk = Cost

- Unnecessary

Obsolete

Self explanatory

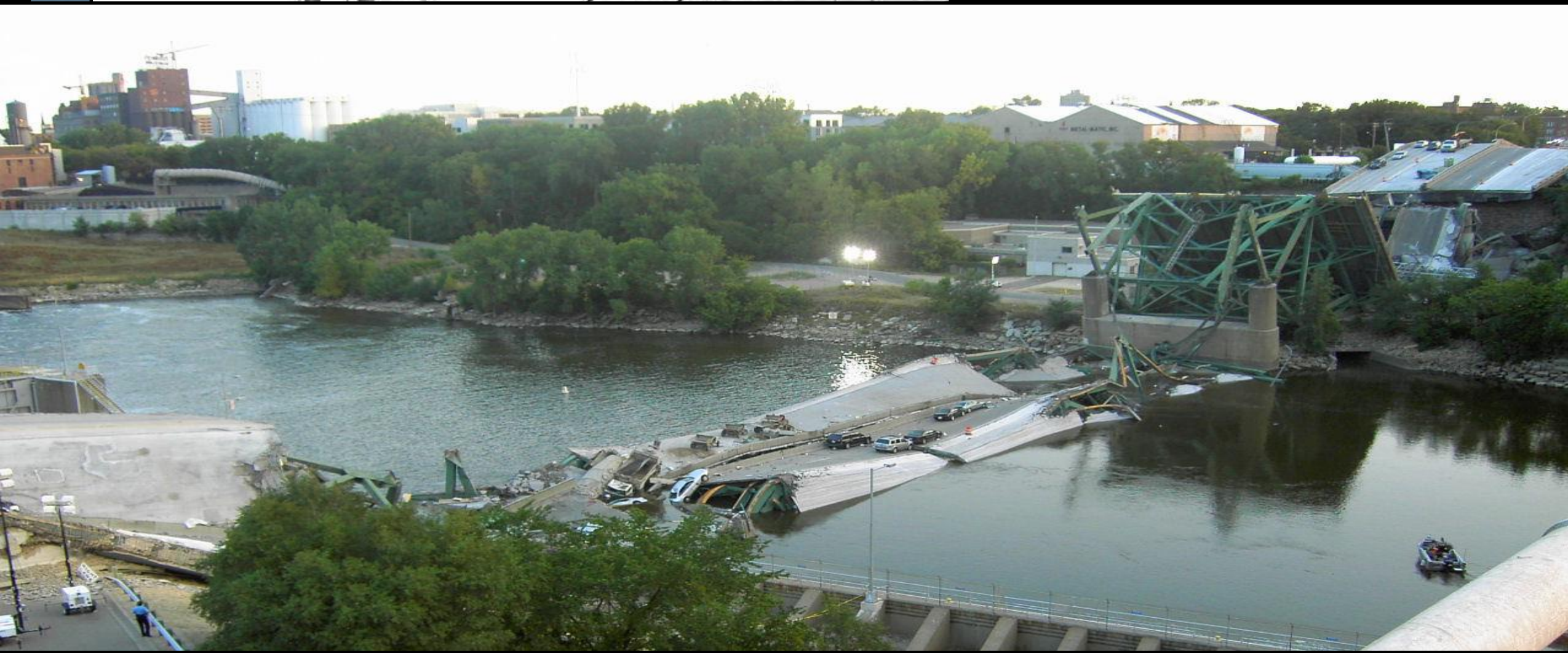
Disguised as regulatory

- Inappropriate

Unit of measure

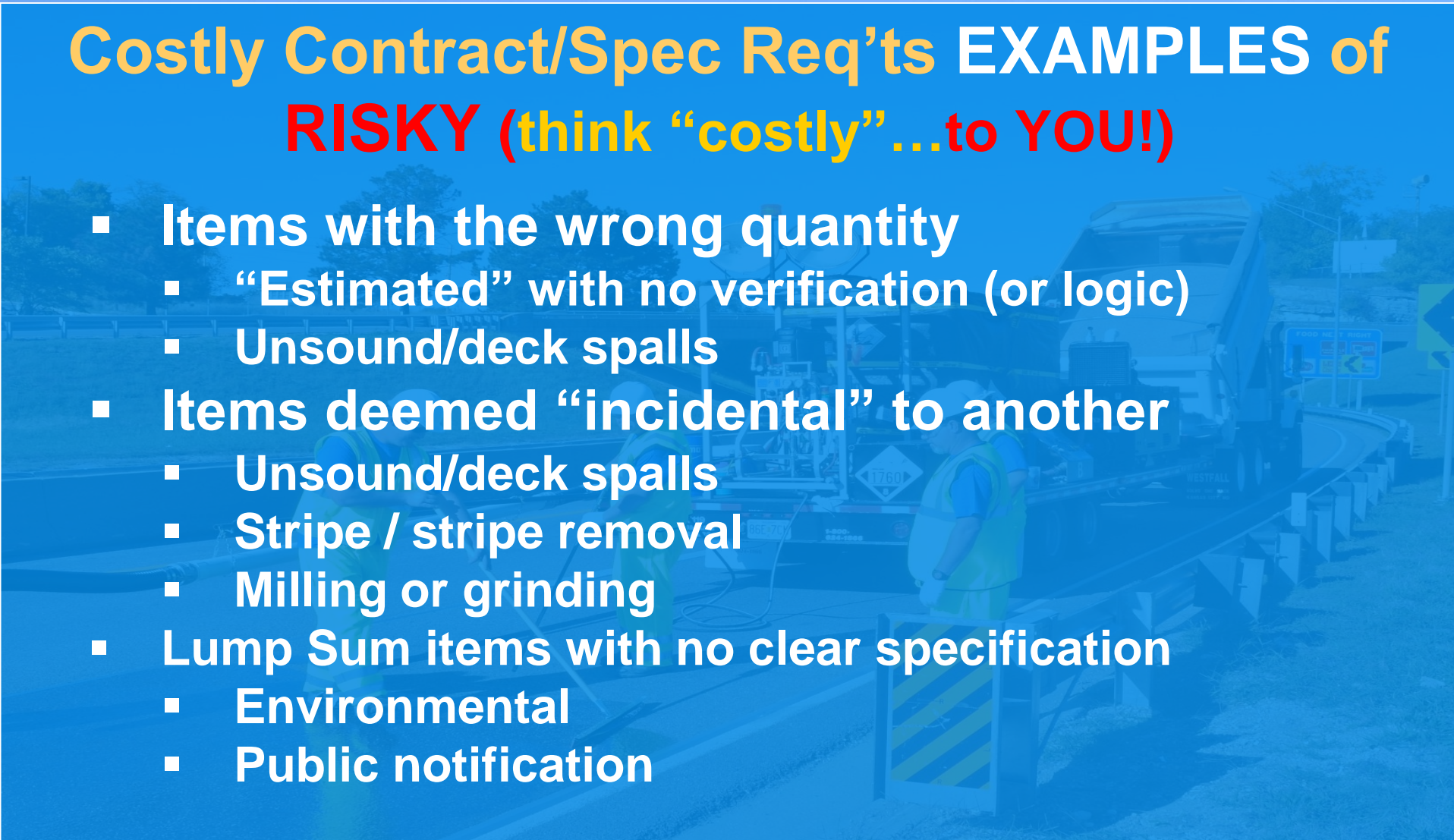
Order of magnitude

Avoid letting the **biggest risk taker** win the job.



Costly Contract/Spec Req'ts **EXAMPLES of RISKY** (think “costly”...to YOU!)

- Items with the wrong quantity
 - “Estimated” with no verification (or logic)
 - Unsound/deck spalls
- Items deemed “incidental” to another
 - Unsound/deck spalls
 - Stripe / stripe removal
 - Milling or grinding
- Lump Sum items with no clear specification
 - Environmental
 - Public notification



Costly Contract/Spec Req'ts **EXAMPLES of UNNECESSARY**

- *Excessive* cores
- *Excessive* testing
- Plotters on *every job* (provided “free” to DOT)
- Field Office for 1-2 week job
- Air & noise monitoring at multiple locations *every night*
- Test slabs (not in work area)
- Primer before the MLO (epoxy)
- Specifying exclusive means and methods (HFST)

Don't fall for “We'll make the Contractor pay for it”.

Costly Contract/Spec Req'ts EXAMPLES of INAPPROPRIATE

- Items with the wrong UOM
 - Make UOM appropriate to Bid item
(2 dimensional versus 3 dimensional)
 - SF or SY when CF or CY is needed
 - Furnish Polyester Concrete
 - Unsound concrete
 - CF or CY when SF or SY is needed
 - Prep & Place Polyester Concrete
 - SF when GAL is needed
 - Furnish Healer/sealer (methacrylate etc.)
 - Per Man-Hour: for labor, equipment, materials, traffic +
 - Lump Sum when Unit Price is better
 - Repair, or replace “all damaged bolts”
 - Unit Price when Lump Sum is better
 - Traffic Control (most times)

Costly Contract/Spec Req'ts **EXAMPLES of INAPPROPRIATE**

- Sole sourced (or stated) material or sub
- Destructive testing AFTER complete
 - Core the new cFRP
- Performance Spec *plus* irrelevant req't
 - 5 ASTM test's *plus* 2:1 mix ratio
 - 5 ASTM test's *plus* thickness of cFRP
 - Performance Spec *plus* APL/QPL (short)
- Tests and/or cores too frequent
- Stated price for materials or subs

Costly Contract/Spec Req'ts EXAMPLES of INAPPROPRIATE

Specifying means and methods (vs performance)

- Only certain *proprietary* equipment allowed
- Both coats in same shift (MLO)
- 4 hour cure (i.l.o. rebound [ex: Schmidt] hammer)
- Spray methacrylate
- One hand (or both) tied behind your back

Use performance standards when reliable,
add testing and acceptability when worried,
add means & methods when there is *only one way to do it*.
Add minimum Contractor Qualifications when appropriate.

Administrative Best Practices

- Plan holders list
 - Posted
 - Bidders & non-bidders
- Q&A (Bidder Inquiry) posted
- Monitor/update MBE program goals
- Be consistent with B.I. names
 - Searchable
- Electronic Bidding (not paper)
 - Certainly not BOTH (WY)
- Be consistent with implementation of rules.
 - Avoid being a moving target



THANK YOU!

QUESTIONS?

Kurt Clink
President | CEO



1310 W 23rd St. Tempe, AZ 85282
602-437-1711 www.truesdellcorp.com
kclink@truesdellcorp.com