CASFM 2018 Annual Conference

**Professional Development Sessions:**

**Session 1:** The Truth About Motivation & Team Building
Emily C. Villines (Calibre Engineering, Inc.)

**Session 2:** Wonderland Creek Construction Lessons Learned
Kurt Bauer & Robby Glenn (City of Boulder, Public Works)
The Truth About Motivation & Team Building

Emily C. Villines, MA, CPSM
Calibre Engineering, Inc.
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13-30% of staff actively engaged

Strong corporate culture = 500% more revenue growth than an average company

Strong corporate culture = 765%+ net income over 10 years
High Functioning Group Dynamics: People have to feel safe in and connected to the group

- Purposefully invest in exchanges
- Acknowledge individual value
- Actively practice an open forum of communication
- Leadership puts the team’s interest ahead of everything (and everyone) else
High Functioning Group Dynamics: People have to trust each other

- Trust comes from vulnerability
  - Leaders have to be vulnerable first
  - Use vulnerable language
- Eliminate hierarchy
  - Do the hard stuff together
  - Fight authority bias
  - Discuss issues without leaders
- Encourage a spirit of curiosity
  - Support open communication
  - Give staff a platform
  - Ask without intent to answer
  - Explore together without trying to win
High Functioning Group Dynamics:
People have to be driven by a common, clarified purpose

- Develop purpose together
- Create beacons, language, priorities, and catch phrases
- Assign advocates
- Link to present and future
What motivates us? The fun of mastering a challenge.

We need...
- Creativity at work
- Opportunities for quality and continual improvement
- Genuine achievement
- Opportunity to increase competence
- New and engaging intellectual challenges

Work needs to...
- Create situations for progression
- Offer opportunities for learning and improvement
- Encourage experimentation
- Encourage time devoted to enjoyable work
What motivates us?
Having control

We need a work environment in which...

- Goals are clear
- Feedback is immediate
- We are able to focus on output (our work) instead of input (our hours)
- We are able to create new domains for ourselves and processes for our work
- We are given the freedom to make decisions and manage our work
What motivates us?
Working for a bigger purpose

- Establish a purpose
- Give to charity or non-profit causes related to work
- Take time to do non-commissioned work related to what you love

Find purpose. The means will follow.

Mahatma Gandhi
Resources

- Coyle, Daniel. The Culture Code: The Secrets of Highly Successful Groups.
- McGregor, Lindsay & Doshi, Neel. How to Motivate Frontline Employees.
- Pink, Daniel. The Surprising Truth About What Motivates Us.
- Sackstein, Starr. Educators’ Powerful Role in Motivation and Engagement.
- Subat, Alex. Tips on Enhancing and Tracking Employee Motivation.
- Thompson, Sonia. 3 Science Backed Ways to Improve Your Performance.

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**Wonderland Creek Project**

- Nine years in the making
- 100-year channel improvements
- 450 dwelling units no longer in 100-year floodplain
- Missing Multi-use path link
2013 Flood Event
Project Complexity

- BNSF Railroad
- Boulder White Rock Ditch
- Fully urbanized area
- Numerous utilities
**FINANCES**

- $20.3 million original bid
- $22 million final construction cost
- $8 million design + Construction Services
- $30 million total project cost
FUNDING SOURCES

Federal Funding  
$5.7 million  
19%

UDFCD  
$4.8 million  
16%

City of Boulder  
$19.5 million  
(65%)

Percentage of project using outside funds 35%
CONSTRUCTION TIMELINE

- January 2016 construction begins
- Original Contract length 2 years
- Substantially complete June 23rd 2018 (6-month delay)
- Final Acceptance deadline October 31st, 2018
KEY LESSONS LEARNED

1. Consider consequences of grant administration
2. Utilize contractor and internal staff in design
3. Establish city-private utilities relationship
HOW MANY FULL-TIME ONSITE INSPECTORS?

(a) One
(b) Two
(c) Three
(d) Four
1. The consequences of federal funding
CDOT FORMS

- Form 205 – Sublet Application
- Form 266 – Inspectors Progress Report
- Form 832 – Trainee Status and Evaluation Report
- Form 838 – On the Job Trainee/Apprentice Record
- Form 1391 – Contractors Annual EEO Report
- Form 1415 – Anticipated DBE Participation Plan
- Form 1418 – Monthly payment summary
- Form 1419 – DBE Participation Report
- Form 90 – Contract Modification Order (CMO) – 48 change orders on project
MINOR CONTRACT REVISIONS

- Incorporate MCR’s into bid tab.
  - 5-10% of project cost
  - Accounts for small changes
  - Can be combined into one CMO
  - Approx. 50% of our CMO could have been MCR’s
CDOT FUNDING:

- Design engineer cannot be primary construction manager

- Project Delivery Method selection
  - Design/bid/build
  - Construction Manager/General Contractor
  - Design/Build
HUD VS. CDOT

- Davis Bacon FHWA and HUD forms are different
  - Verify prevailing wages

- Every payroll can be audited

- Underestimated administrative time
HUD & CDOT

- Expect full-time employee to administer paperwork

- ~10% of funds will likely go to administration of grant (just city)
2. CONTRACTOR AND INTERNAL REVIEW IN DESIGN
HOW MANY HOURS OF TRAFFIC CONTROL FLAGGING ARE REQUIRED FOR A PROJECT OF THIS SCALE?

(a) 5,000
(b) 10,000
(c) 20,000
(d) 30,000

Total Cost = $580,000
CONSTRUCTABILITY REVIEW

Consider CM/GC option or 3rd party contractor review

- Constructability
- Phasing
CONSTRUCTABILITY REVIEW

Consider CM/GC option or 3rd party contractor review

- Ensure Specs address complex phasing

- Consider liquidated damages
PRIVATE UTILITY CONFLICTS

3. Establish and maintain city-private utilities relationship
COORDINATION

- Include private utilities in design
- Relocation design: 4 to 6 months
- Pothole (Include in bid documents)
- Meet as frequently as needed
CONSTRUCTION

- Designated utility coordinator
- Utility relocates are contractor’s responsibility
- Be involved with observation
- Be ready for unknown utilities
PROJECT COMMUNICATIONS

- Build rapport with community during design
- Identify businesses w/critical needs
- Inform public of progress & milestones
- Over deliver under promise
KEY LESSONS LEARNED

1. Consider consequences of grant administration
2. Utilize contractor and internal staff in design
3. Establish city-private utilities relationship
CONSTRUCTION STAFF AND ROLES

Are all aspects of the project covered?
INSPECTORS

Construction Manager

Assistant Construction Manager

Missing Areas

• Inadequate field staffing
• Experience with stream work
• Water Utility (pipe) inspection
• Clarity on decision making authority
EXECUTION PLAN

- Project Execution Plan (PEP)
- Role responsibilities
- Resource allocation
- Organization chart
POTHOLEING

- Pothole during design
- Verify tie-ins, material, elevations, and diameters
- Don’t assume as-builts are correct
- Bill SB 18-167
APPROXIMATE PERCENTAGE OF TIME SPENT BY CONSTRUCTION MANAGER ON CDOT PAPERWORK?

(a) Twenty
(b) Forty
(c) Sixty
(d) Eighty
CONCLUSIONS

• Ensure all aspects of project are covered by CM team

• Verify requirements for federal funding and associated implications

• Perform a constructability review

• Coordinate as early and as often as you can with Private Utilities

• Have a construction team that can flex with whatever may happen