

# Alternative Project Delivery Moolin Seminar -- 2015

*Unique Circumstances:  
Unique Creativity*

**(Dr.) Paul V. Perreault, P.E.**

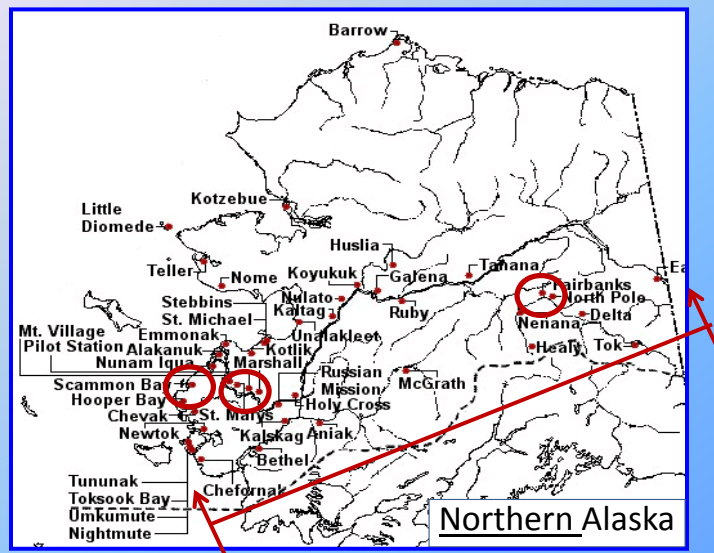
Northern AK, Arctic Construction since 1974

[pvpengineer@ak.net](mailto:pvpengineer@ak.net)

November 18, 2015



## 35 Yrs. 50 Villages



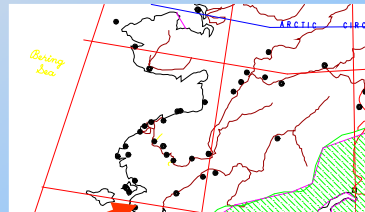
## QC... COORDINATION



Planning, Design, and  
Construction Team...  
**READILY ACCESSIBLE.**

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## COORDINATION ? Time, Patience, Redundancy

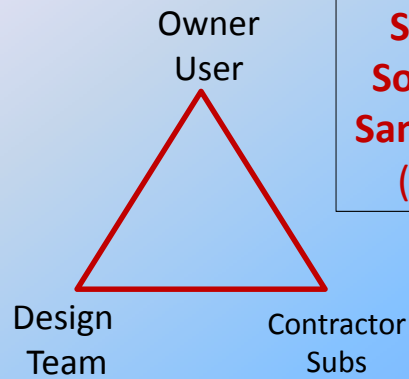


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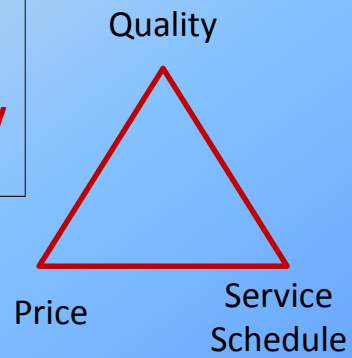
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## Project Delivery – Two Triangles

### Stake Holder Groups



### Value - Groups



**Safe  
Sound  
Sanitary  
(S<sup>3</sup>)**

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## Delivery A, Pilot Station Local Volunteer Workers

Pilot Station



### **TMELIO-PSB**

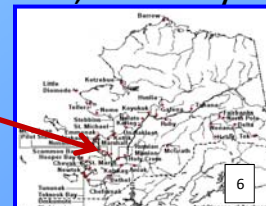
Tasks, Materials, Equip.,

**Labor, I&O**

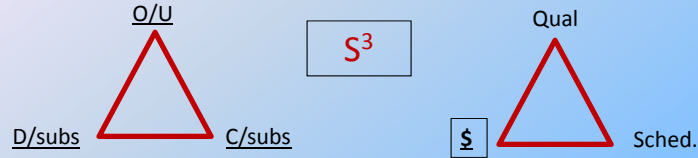
Permits, Schedule,

Budget

Safe, Sound, Sanitary



## A. Pilot -- TMELIO-PSB



- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• TASKS</li> <li>• MATERIALS</li> <li>• EQUIPMENT</li> <li>• <u>LABOR</u></li> <li>• INDIRECT</li> <li>• OVERHEAD</li> <li>• SCHEDULE</li> <li>• BUDGET</li> </ul> | <p>What You're Doing</p> <p>Step by Step: CSI Format</p> <p>Expect to IMPORT</p> <p><u>Varying Skills – Local QC</u></p> <p>\$ @ Site, Unseen when Done</p> <p>\$ Off Site, Home Office</p> <p>6%, 10%, 15% Inflation/Yr.</p> <p>\$ Constraints → Redesign</p> |
|---|--|

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## TRANSPORTATION



Fairbanks:

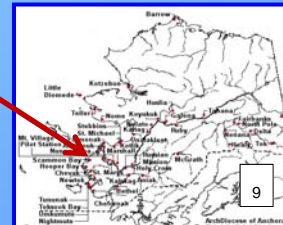
Schedule?  
Full-Load?

Destination:

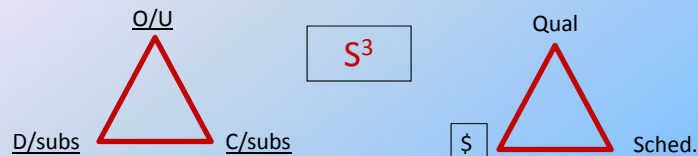
Runway Length?  
Width? Soft? Rutted?

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## Delivery B, Scammon Bay Tribal Council - Labor Contract



### B. Scammon Bay – TMELIO-PSB



- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• TASKS</li> <li>• MATERIALS</li> <li>• EQUIPMENT</li> <li>• <u>LABOR</u></li> <li>• INDIRECT</li> <li>• OVERHEAD</li> <li>• SCHEDULE</li> <li>• BUDGET</li> </ul> | <p>What You're Doing</p> <p>Step by Step: CSI Format</p> <p>Expect to IMPORT</p> <p><u>Varying Skills – Outside QC</u></p> <p>\$ @ Site, Unseen when Done</p> <p>\$ Off Site, Home Office</p> <p>6%, 10%, 15% Inflation/Yr.</p> <p>\$ Constraints → Redesign</p> |
|---|--|

## TRANSPORTATION? MATERIALS?



SCM: Depends: - Site by Site!

Hilly? Wet? Gravel? Silty Sand! Worse?

## TRANSPORTATION? MATERIALS? L&M → L, Frt, & M



Destination EWU:

Eroded slough  
w/ mud?



Destination SCM:

Schedule? 6-weeks late?  
L.D.= Sunk? Storm?

### Scammon Bay System – QC...



(1) Missing GLB

(2) Moment Piles, boulders, frost jacking, QC....

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### Scammon Bay – Changed Conditions



Aug 3

Aug 5

DEC. Availability, Travel,  
Time, Cost, Remediation



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## CONSTRUCTION: Methods

Scammon



Local Methods.



Respect, Trust, & Verify

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## Quality Control Suggestions Remote Construction

1. Active Stakeholder Involvement – throughout!
2. QC: Independent Reporter – to Owner's Rep.
  - A. Enculturated – but NOT from the region.
  - B. Expert for this construction.
  - C. CAN use 'my boss won't allow it.'
3. Frequently – Daily? Weekly?
4. Alternative COMMO is vital.

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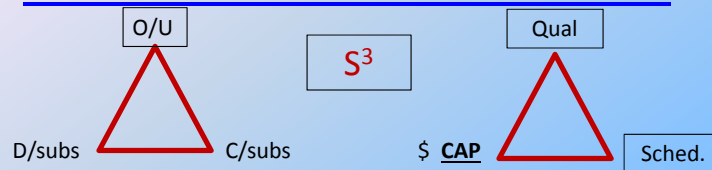
## Delivery C, Fairbanks Design-Contractor Balance



CSF – C.B. Bettisworth, et al. 2010

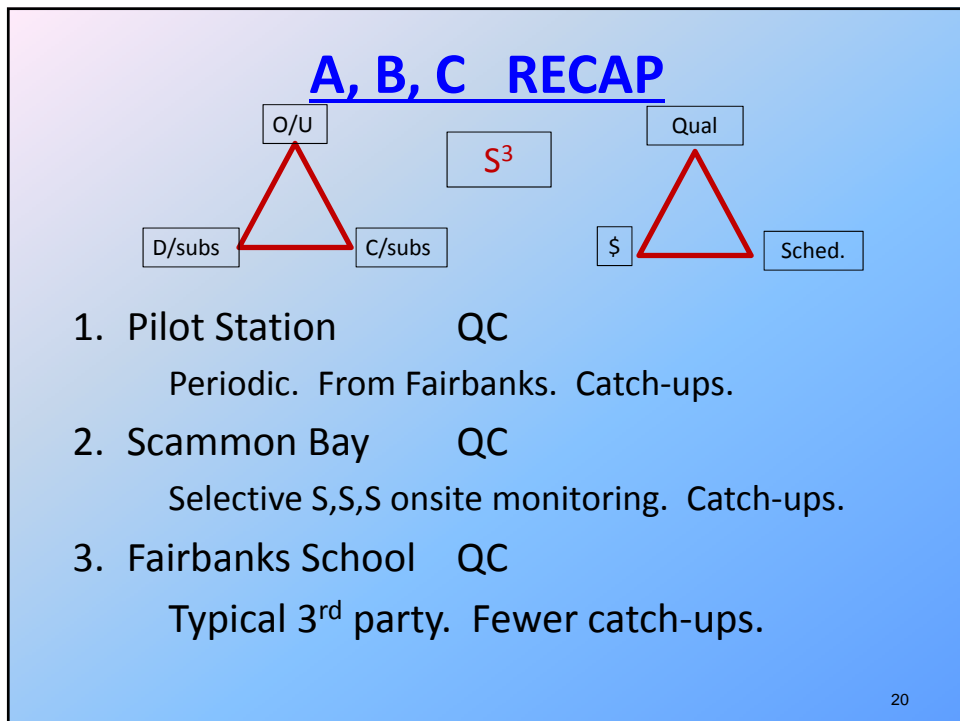
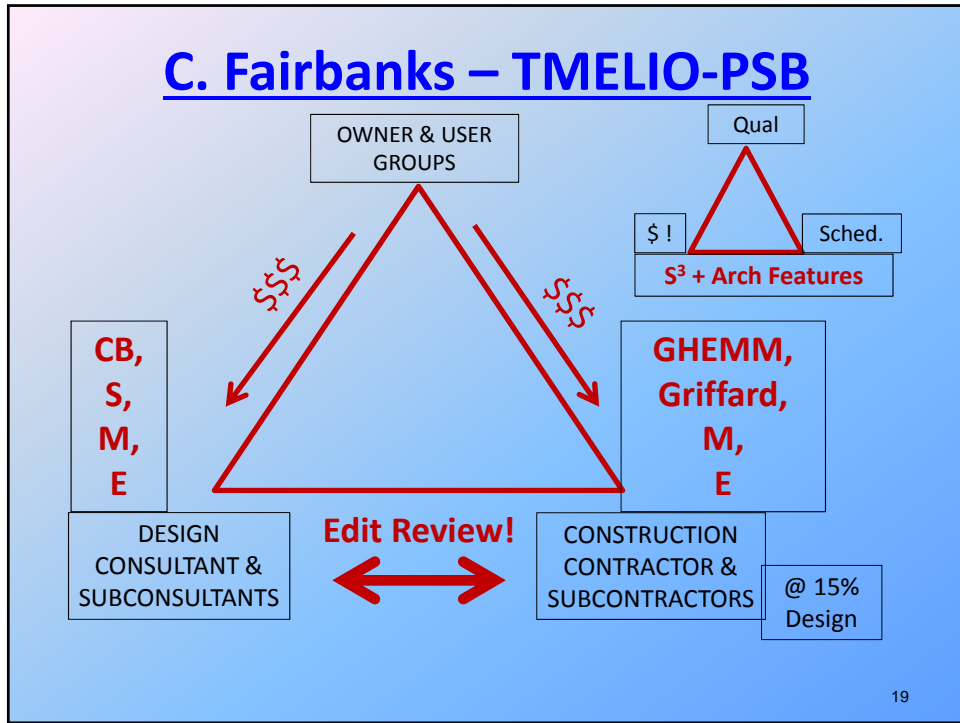
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## C. Fairbanks – TMELIO-PSB



- (TASKS)
- MATERIALS
- EQUIPMENT
- LABOR                      Professional – Outside QC
- INDIRECT
- OVERHEAD
- SCHEDULE
- (BUDGET)                      \$ Constraints → Redesign

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## Recap

1. Pilot Station      QC  
    Periodic. From Fairbanks. Catch-up on issues.
2. Scammon Bay      QC  
    Selective S,S,S monitoring onsite.
3. Fairbanks School    QC  
    Typical 3<sup>rd</sup> party.

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Thank You for Coming, and...  
Don't pull your hair out.  
It did NOT help me. :)

Q, C, S, E R?

Presentation by  
Paul V. Perreault, P.E



<http://www.wunderground.com/US/AK/Fairbanks.html>

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