Value Engineering and Context Sensitive Solutions

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Congratulations !!

• I Congratulate the Ontario Ministry of Transportation for Voluntarily Conducting Value Engineering Studies without being prodded by Regulations.
• You have seen the Value!!
US Regulations on VE

- US Federal Highway Administration: 1995
  $25 Million Total Project Cost
  includes Planning, EPE, Design, ROW, and
  Construction phases

- Michigan DOT: Began 1997
  VE Studies only to meet FHWA Requirements
  70+ VE Studies since 1997

US Regulations on CSS

- No Federal Regulations currently
- Might have individual State Regulations or
  Requirements
- CSS is in development:
  much agreement
  some disagreement
  much doubt due to many unknowns
The Public, VE, and CSS

- Public and local government input to DOT
- DOT dialogues with Public and local government
- Then hold VE Study to improve Value or Reduce Cost
- Always Retain the original Intended Function

VE and CSS on Projects

I-94 Downtown Detroit, 6 miles:
- 3-week VE in 2004 just before FEIS, after 10 years EPE
- Improved ROW use, kept sidewalk, service road lanes, and parking
- Confirmed tight ROW can contain freeway, walls, and service drives
- Improved pedestrian crossings of freeway only, not of service roads
- Questioned many cost assumptions (large & small)
VE and CSS on Projects

From 70 other VE Studies:
• Retain Environmental Commitments, but improve implementation to Add Value
• Maintaining Traffic
• Work Hour Restrictions: fewer hours over more days, or more hours over fewer days
• Citizen input often different than City Hall

History of Value Engineering

• Began in 1940’s to aid the war effort
• Now also called Value Planning, Value Methodology, and other Value terms
• Considers Function, Cost, & Worth to Maximize all three
History of Value Engineering

- 1995: US law requires VE Studies on highway projects with Total Cost greater than $25 Million
- 1997: Michigan DOT required to comply
- 1997: Ontario voluntarily begins VE

Status of Value Engineering

- 2006: This Formalized VE Work Plan followed by all practitioners: (approx)
  - Investigation: 10 hours
  - Speculation (Brainstorming): 6 hours
  - Evaluation: 3 hours
  - Development: 20 hours
  - Presentation: 2 hours
  - Implementation: 2 hours
### Status of Value Engineering

- Usually a 40-hour 1-week Study
- VE Team of 5-8 experts not connected with the project design (fresh set of eyes)
- Led by Trained VE Facilitator
- Follows VE Work Plan
- Owner retains 100% of cost savings

- MTO & FHWA: Owner’s decision whether to Implement VE Recommendations is Voluntary!!!

### Value Engineering Change Proposal (VECP)

- Held during Construction
- Contractor-initiated
- Abbreviated work plan; fast track approval
- Cost Savings split 50/50 between Owner and Contractor
History of Context Sensitive Solutions (CSS)

- 1998: Context Sensitive Design coined at ‘Thinking Beyond the Pavement’ conference: describes many current processes to engage the public
- 2000: 5 Pilot US DOTs document their existing and new processes
- 2000-2006: many new publications and terms (CSS, Common Sense, Placemaking, …)
- December 2003: Michigan Governor directed MDOT to begin CSD (now called CSS)

- 2005: Michigan DOT called our process Context Sensitive Solutions, to indicate broader responsibility (Planning, Design, Construction, Operation, Maintenance)
- Identified 60 Statewide Stakeholders
- Stakeholders helped write MDOT’s first CSS Policy
**2006 Status of CSS in US**

- Already embraced by 10-15 DOTs
- Very flexible process to engage the Public, to fit each local situation
- Early, Often, Continuous
- DOT led; DOT retains final say
- Voluntary whether to implement Requests
- US Policies and Procedures currently being discussed, before Regulations in (2007/08?)

**If CSS is so good, ……**

- Why is CSS only talked about in relation to Transportation???
- And most often, only with Highways???
- It is good that CSS is being advocated in both Canada and the US.
### Comparing VE and CSS

#### Similarities

<table>
<thead>
<tr>
<th>Value Engineering</th>
<th>Context Sensitive Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Is a Process</td>
<td>• Is a Process</td>
</tr>
<tr>
<td>• Constraints given early</td>
<td>• Constraints given early</td>
</tr>
<tr>
<td>by DOT</td>
<td>by DOT</td>
</tr>
<tr>
<td>• Voluntary to Implement</td>
<td>• Voluntary to Implement</td>
</tr>
<tr>
<td>VE Recommendations</td>
<td>Requested Items</td>
</tr>
</tbody>
</table>

#### Differences

<table>
<thead>
<tr>
<th>Value Engineering</th>
<th>Context Sensitive Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Required</td>
<td>• Voluntary</td>
</tr>
<tr>
<td>• Projects &gt; $25 Million</td>
<td>• All Projects</td>
</tr>
<tr>
<td>• 40-hour Study</td>
<td>• Ongoing Dialogue – years!</td>
</tr>
<tr>
<td>• Occurs at 30-50% Final</td>
<td>• Occurs Planning through</td>
</tr>
<tr>
<td>Design</td>
<td>Construction &amp; Operation</td>
</tr>
<tr>
<td>• Done by those Not</td>
<td>• Includes those who will be</td>
</tr>
<tr>
<td>Involved</td>
<td>Involved</td>
</tr>
<tr>
<td>• Led by Trained Facilitator</td>
<td>• Led by anyone</td>
</tr>
<tr>
<td>• One-time peer review</td>
<td>• Continuous, with lay people</td>
</tr>
<tr>
<td>• Saves or costs money,</td>
<td>• Adds Value, might cost or</td>
</tr>
<tr>
<td>but Adds Value</td>
<td>save money</td>
</tr>
<tr>
<td>• Formalized Work Plan</td>
<td>• No set Work Plan</td>
</tr>
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</table>
Both VE and CSS

- Attempt to Add Value
- Try to integrate the project into the adjacent setting

VE and CSS: Increasing Value, while Retaining Function

- Lower the Cost, keep the Function
- Add Function at same Cost
- Provide for Additional Users
- Cost-share on Construction and/or Maintenance
- Provide Desired Functions elsewhere
- US History sides with those that Pay (motorists), but I feel a change underway
VE and CSS

• The Jury is still out (FHWA, DOTs, Public)
• Further AASHTO discussion winter 2006
• TRB sessions January 2007
• FHWA encouraging all State DOTs to give CSS Training to their staff during 2007
• I doubt the two processes will be combined

Many Users of the Public ROW

• Active Users, and Quiet Users
• Most ROWs are too narrow to safely accommodate all uses
• Some uses can safely co-exist
• Some users do not want to share the Public ROW
• Some adjacent users do not want other users in the Public ROW, or want to dictate their use patterns (speed, type, …)
Win’s Conclusions

• VE & CSS are compatible and complimentary Processes
• VE & CSS are not in competition
• VE & CSS work for the Public Good, in different ways
• VE: larger jobs; CSS: all jobs
• Many current reasons why they won’t be done together, or why one won’t replace the other
• More discussion must occur and experience gained to determine the eventual relationship between VE and CSS

Suggested CSS Readings (see handout)

• FHWA national CSS website
• When Main Street is a State Highway
  2001 Maryland State Highway Admin
• People and Pavement: Transportation Design that Respects Communities
  2004 Michigan Land Institute
• MDOT CSS Awareness Training Material on MDOT website
• Also New York, Minnesota, Pennsylvania
Thank You

- Please tell others if you have the Answers!
- Please share your Best Practices with others!

I'll try to answer your questions

Win Stebbins, Michigan DOT Design