

MINNESOTA'S EXPERIENCE WITH ALTERNATE PAVEMENT TYPE SELECTION (APTS)

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Presentation Outline



- What is APTS ?
- Why do APTS ?
- Why Evaluate APTS ?
- What APTS Information was Collected ?
- How was APTS Information Collected ?
- How was APTS Information Analyzed ?
- What are the Key Findings of APTS Evaluation ?

What is MnDOT's Alternate Pavement Type Selection (APTS) ?

- Two equivalent alternate pavement designs in a project plan (asphalt and concrete)
- Life Cycle Cost Analyses (LCCAs) difference computed and included in special provisions
- Bidders choose one alternate to bid on
- For bid comparison the LCCA difference is added to bids on the high LCCA alternate
- Resulting lowest bid wins



Why do APTS?



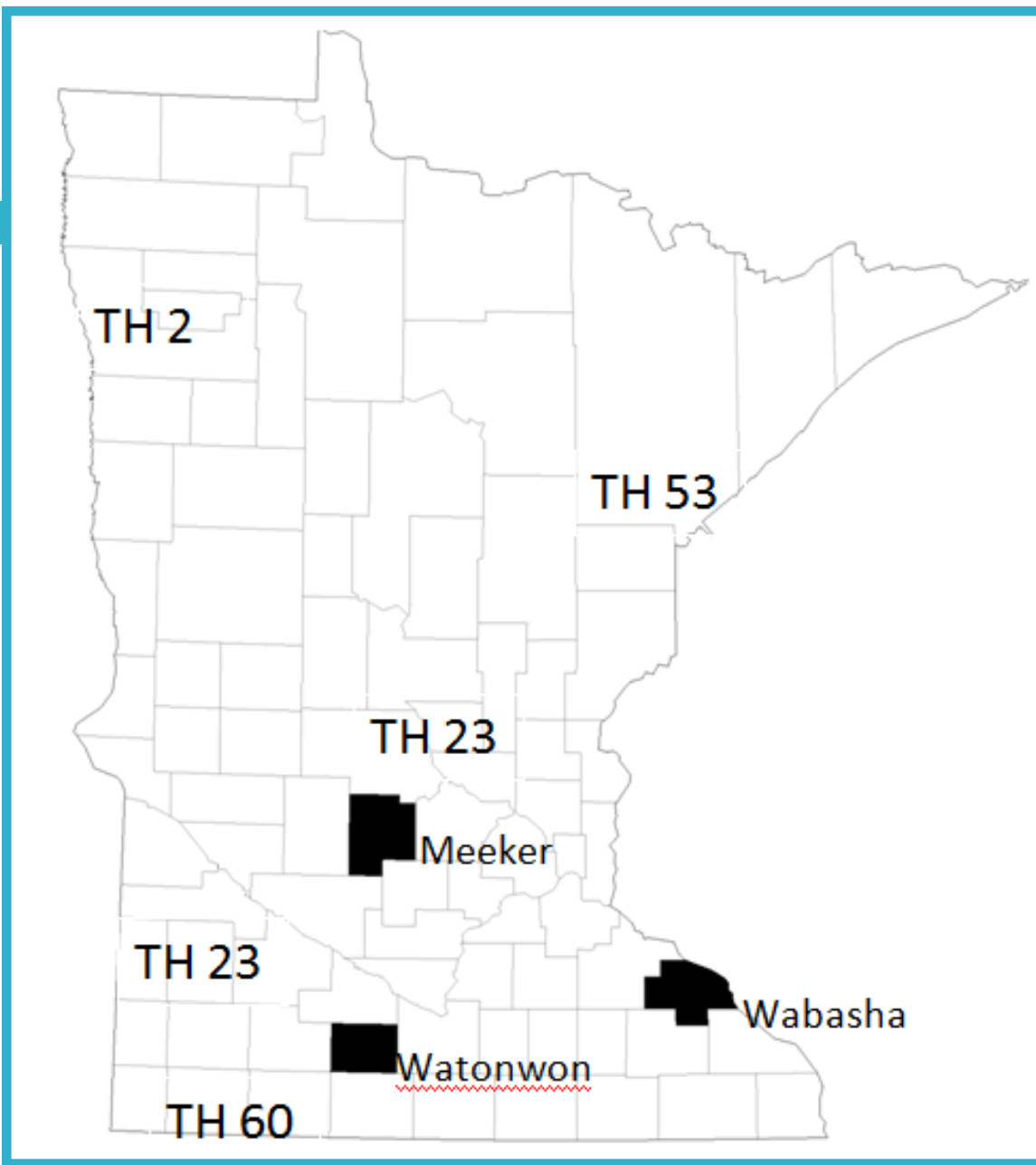
- Pavement type selection based on actual materials cost at time of bidding
- Attract more bidders
- More competitive bidding

Downside: Extra agency & bidder work is needed to prepare plans & bids.



CANARY PETE

**Minnesota
APTS
Project
Locations**



Why Evaluate APTS?



- ❑ APTS normally not allowed by FHWA
- ❑ Allowed under a FHWA experimental program (SEP14)
- ❑ In 2008 FHWA approves MnDOT SEP14 plan and request to use APTS
- ❑ Plan calls for evaluation report
- ❑ Learn what works and what doesn't
- ❑ Improve the APTS process

Evaluation Panel Membership



- Kevin Kosobud, MnDOT OC&IC (co-chair)
- Curt Turgeon, MnDOT M&RR (co-chair)
- Rich Wolters, MAPA
- Matt Zeller, CPAM
- Darin Mielke, Sibley Co. Public Works
- Mel Odens, MnDOT District 8
- Bill Lohr, FHWA Minnesota Division
- Nelson Cruz, MnDOT Research Services
(administrative liaison)

Panel Guided the Evaluation



- Identified APTS projects
- Named key contacts for information
- Defined information needed to evaluate APTS projects
- Provided feedback on findings

Key Contact Groups

MnDOT

- District Design
- District Materials
- District Construction
- CO Estimating
- CO OC&IC

Others

- Bidders on MnDOT APTS Projects
 - All bidders
 - Winning bidders
- County Engineers w/APTS projects

Planned Information Collection



- Additional design time vs. time saved in performing the current selection process.
- Number of bidders on APTS and standard projects
- Comparison of estimated and bid unit prices for APTS and standard projects
- Comparison of the design and construction experiences on APTS and standard projects
- Assessment of all bidders experience.

22 Specific Questions

Survey Questions (numbers correspond to SEP measurements)	Responders
1.1 Briefly describe how in-place materials were evaluated and considered for this APTS project.	District Design District Materials
1.2 Was a Life Cycle Cost Analysis (LCCA) performed in the District prior to the Materials Design Recommendation Letter?	District Design District Materials
1.3 What best describes the nature of the project (i.e. rehabilitation, reconstruction, preservation, etc.)?	District Design District Materials
1.4 Was one AC and one PCC detail design developed and included in the APTS plan for bidding the project?	District Design District Materials
1.5 If two detailed designs were done for this project, did the APTS approach offer your agency any advantages to offset the additional detailed design work? If yes, please describe these advantages in detail.	District Design District Materials
1.6 What was the structural design method used for each pavement type?	District Design District Materials
2.1 The average number of bids on the 5 Mn/DOT APTS projects was 4.8. Do you feel this is higher or lower than projects using the standard selection process? Can you provide data to support your answer?	Mn/DOT CO OCIC
3.1 Can you compare the Engineer's Estimate pavement unit prices that would have been used for a standard selection process vs. the estimated unit prices used for each of the 5 APTS projects?	Mn/DOT CO Estimating
3.2 Can you compare the bid pavement unit prices on similar standard selection process projects vs. the bid unit prices on each of the 5 APTS projects?	Mn/DOT CO Estimating
3.3 What was the basis for selecting the timing and maintenance cost factors for the APTS process for each of the 5 APTS projects?	Mn/DOT CO Estimating
4.1 What are the pros and cons in designing an APTS project compared to a standard selection process project? Please provide specific examples and impacts.	District Design District Materials
4.2 Are there any pros or cons in inspecting and administering an APTS contract compared to a standard selection process contract? If yes, please provide specific examples and impacts.	District Construction
4.3 Please describe (including the value of) any pavement related change order, supplemental agreement, incentive (won or lost), or disincentive for this contract.	District Construction
4.4 How was any in-place material used in the pavement structure?	District Construction
5.1 Are there any pros or cons in constructing an APTS contract compared to a standard selection process contract? If yes, please provide specific examples and impacts.	District Construction Contractor (winning bidder)
5.2 How many APTS projects have you bid on?	Contractor (all bidders)
5.3 Have you bid on each alternate or only one pavement type? In all cases?	Contractor (all bidders)
5.4 Have you been a successful awarded bidder for an APTS project?	Contractor (all bidders)
5.5 How would you describe your experience with bidding on an APTS project? What worked well and what didn't? Please give specific examples from specific projects.	Contractor (all bidders)
5.6 What bid parameters are desirable for an APTS project in your view (i.e. cubic yard, square yard, ton, lump sum, etc.)? Why?	Contractor (all bidders)
6.1 In summary what would you say are the major pros and cons of an APTS process vs. a standard selection process for different types of projects t (i.e. rehabilitation, reconstruction, preservation, etc.)?	All
6.2 What specific suggestions do you have to improve the APTS process?	All

How Information was Collected



- ❑ Fleshed out key contacts information
- ❑ Sent survey via email
- ❑ Followed up to get more responses
- ❑ Offered anonymity to responding bidders
- ❑ Started and ended the survey phase in August 2011

APTS Survey Response Rate

Group	Sent	Responses	Rate
Contractors	15	7	47%
County	3	3	100%
MnDOT	12 (9 district + 3 CO)	7	58%
Totals:	30	17	57%

How Information was Analyzed

- Tabulated responses from 17 surveys to each of the 22 questions

-  **12** page document

- Summarized responses for each question

-  **5** page document

- Extracted key findings from summaries

-  **2** page document

- Sent each document to panel for comments

Key Findings (1-3)



- 1) The use of lump sum bid items on some projects and conventional bid items on others projects muddled the view of the APTS process.
- 2) Surveys confirmed that APTS projects caused more work and time crunches for all. No time savings were identified. The 4 alternate project really caught some flak.
- 3) Counties had more bidders w/APTS. One MnDOT project had bids from both industries. Project requirement may have locked out one industry.

Key Findings (4-6)



- 4) Industry comments about alternate designs not being equal. MnDOT employee stated that pavement type should be selected by MnDOT, not by the bidding process.
- 5) Asphalt and concrete standards/specs differ because they developed independently. These differences made the APTS process more complex.
- 6) Several ideas were offered for reducing differences in plans/standards/specs. i.e. “alternate pavement match line”

Key Findings (7-9)



- 7) Bidders felt there was some lack of uniformity on the part of MnDOT in carrying out the APTS process.
- 8) It was not possible to determine if the APTS process had an impact on pricing or not because of project and market variability.
- 9) Some bidders questioned the fairness of the LCCA method used by MnDOT.

Key Findings (10-11)



- 10) The APTS process did not significantly affect the construction of the projects. Only complaint was that the plans were larger and more confusing to construction staff.
- 11) There was no discernable consensus on which type of project (rehabilitation, reconstruction, preservation) might be more appropriate for the use of APTS bidding.



Acknowledgements



- The Evaluation Panel Members who initiated and guided the evaluation
- The Contractor, MnDOT, and County Staff for making time in their busy schedules to share their experiences with the APTS process
- TERRA who invited me to share this information with you today



QUESTIONS

www.dot.state.mn.us/materials/pvmtdesign/altbid.html

