VALUE ENGINEERING

FY 2025

Value Engineering Introduction

Value Engineering is a formal process which breaks down projects into functions or components that describe what the project should do. It utilizes a team of subject-matter experts to identify solutions that satisfy those functions. It is a process which identifies alternative methods that can achieve the same functions at a lower cost while maintaining quality, performance, and reliability. Value engineering considers costs across the entire project lifecycle including design, material sourcing and construction. Value engineering encourages creative problem-solving that can lead to innovative solutions.

Value Engineering is:

- Function based analysis
- Multi-discipline team approach
- Systematic problem-solving process
- Life-cycle cost oriented
- Value oriented
- Free of normal design restrictions
- A proven management technique

During a Value Engineering Study, the VE Team will question current design policies, review alternate horizontal and vertical alignments, alternate methods of construction, and different materials for bridges and pavement. The team will perform Life Cycle Cost Analyses when appropriate. The team will review the project justification, historical accident data, access points, staging, and earthwork. Changes to the typical sections and lane widths will also be considered.

A list of common recommendations has been created:

- Refine vertical profile and horizontal alignment
- Use 11-foot lanes when possible
- Modify median width and type
- Minimize side road work
- Narrow shoulder widths and back slopes
- Modify drainage
- Modify bridges and walls
- Modify sidewalk and multi-use trails
- Modify lengths of turn lanes

A recommendation in a VE Study represents a quality-enhancing and/or cost-savings alternative. Potential savings are the total amount that could be saved if all recommendations in the VE report were implemented. Approved savings are the actual amount saved based on the recommendations the designer agrees to implement. A recommendation is implemented if the designer incorporates it into their design. The designer can disagree with a recommendation and choose not to implement it, but justification must be provided for not implementing the recommendation. Value engineering efforts in the early stages of project design afford greater savings and allow a change of direction, if appropriate, without affecting deadlines. Many projects were in the

final design stages when their VE Studies were held. It can be more difficult and costly to implement recommendations and make changes to project plans.

Policy Background

The Value Engineering program at the Georgia Department of Transportation (GDOT) began in 1996. In 1995, the Federal Highway Administration (FHWA) adopted a Value Engineering regulation that required VE Studies for all federally funded projects on the National Highway System (NHS) over $25 million. In 1998, GDOT created their VE Policy. From 1998 to 2002, GDOT averaged 5 studies per year. From 2002 to 2005 this average increased to 15 studies per year.

In 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) required VE Studies for all Federal Aid projects as well as bridge projects over $20 million. From 2005 to 2008, GDOT averaged 30 studies per year.

In 2008, SB 417 lowered the state threshold to $10 million. No exemptions were made for funding type; therefore, state-funded projects required VE Studies as well. Due to the lower threshold and the inclusion of state funded projects, the need to perform VE studies increased on a wide range of projects. From 2009 to 2012, GDOT averaged 45 studies per year.

In response to the implementation of MAP-21 in 2012, O.C.G.A. 32-2-41.2 was amended to mirror the federal threshold of $50 million and to exempt design build projects from requiring VE studies.

GDOT Value Engineering Awards

The Georgia Department of Transportation won two of the nine awards at the American Association of State Highway Officials (AASHTO) Value Engineering Conference in New Orleans in September 2011.

- **National First Place Pre-Construction Award (Projects less than $25 million):** SR 36 Passing Lanes and Flint River Bridge replacement project in Upson and Talbot Counties
- **National Honorable Mention Pre-Construction Award (Projects greater than $75 million):** Northwest Corridor project in Cobb and Cherokee Counties

VE Study Summaries from FY 2005 – FY 2025

In FY 2005, 13 VE Studies were conducted by GDOT. The total savings were $84 million. For every dollar spent on VE, GDOT saved $300.

In FY 2006, 26 VE Studies were conducted. The total savings were $13 million. For every dollar spent on VE, GDOT saved $23.

In FY 2007, 48 VE Studies were conducted. The total savings were $90 million. For every dollar spent on VE, GDOT saved $102.

In FY 2008, 39 VE Studies were conducted on projects over $25 million. A total of 55 VE Studies were implemented, including many studies that were held the previous year. There were 639 recommendations, of which 304 were implemented. The total savings were $295 million. For every dollar spent on VE, GDOT saved $138.

In FY 2009, 90 VE Studies were conducted. SB 417 reduced the threshold for VE studies to $10 million (effective July 1, 2008). Thirty-seven of the projects were over $25 million. Fifty-three of the projects were over $10 million but less than $25 million. A total of 85 VE Studies were implemented, including several studies that were held the previous year. There were 738 recommendations, of which 297 were implemented. The total savings were $162 million. For every dollar spent on VE, GDOT saved $73.

In FY 2010, 44 VE Studies were conducted. 23 of the projects were over $25 million. 21 of the projects were over $10 million but less than $25 million. A total of 53 VE Studies were implemented, including several studies that were held the previous year. There were 481 recommendations, of which 255 were implemented. The total savings were $270 million. For every dollar spent on VE, GDOT saved $217.

In FY 2011, 30 VE Studies were conducted. 13 of the projects were over $25 million. 17 of the projects were over $10 million but less than $25 million. A total of 27 VE Studies were implemented, including two studies that were held the previous year. There were 257 recommendations, of which 135 were implemented. The total savings were $47 million. For every dollar spent on VE, GDOT saved $55.

In FY 2012, 14 VE Studies were conducted. 10 of the projects were over $25 million. 4 of the projects were over $10 million but less than $25 million. A total of 15 VE Studies were implemented, including four studies that were held the previous year. There were 155 recommendations, of which 66 were implemented. The total savings were $264 million. For every dollar spent on VE, GDOT saved $537.

In FY 2013, 10 VE Studies were conducted. O.C.G.A. 32-2-41.2 was updated to align with MAP-21 and the threshold for VE studies increased to $50 million (effective July 1, 2013). 5 of the projects were over $50 million. 5 of the projects were over $10 million, but less than $50 million. A total of 13 VE Studies were implemented, including 3 that were held the previous fiscal year. There were 157 recommendations, of which 85 were implemented. The total savings were $56 million. For every dollar spent, GDOT saved $134.

In FY 2014, one VE Study was conducted and implemented. There were 14 recommendations, of which 5 were implemented. The total savings were $5.3 million. For every dollar GDOT spent, $1,861 was saved.

In FY 2015, there were no projects that were eligible for a VE Study.

In FY 2016, 3 VE Studies were conducted. Two of the projects were over $50 million. One of the projects was over $25 million. One of the 3 VE Studies was implemented this fiscal year. There were 7 recommendations, of which 3 were implemented. The total savings were $2 million. For every dollar GDOT spent, $45 was saved.

In FY 2017, 4 VE Studies were conducted on 9 projects. Five of the projects were over $50 million while four were over $25 million. A total of 4 VE Studies were implemented, including two that were held the previous fiscal year. There were 54 recommendations, of which 26 were implemented. The total savings were $27 million. For every dollar GDOT spent, $170 was saved.

In FY 2018, 9 VE Studies were conducted on 12 projects. Three projects were over $50 million while nine were over $25 million. A total of 6 VE Studies were implemented, including two that were held the previous fiscal year. There were 68 recommendations, of which 31 were implemented. The total savings were $42 million. For every dollar GDOT spent, $261 was saved.

In FY 2019, 8 VE Studies were conducted on 8 projects. Five projects were over $50 million while 3 were over $25 million. A total of 11 VE Studies were implemented including five that were held the previous fiscal year. There was a total of 148 recommendations, of which 57 were implemented. The total approved savings were $39 million. For every dollar GDOT spent, $253 was saved.

In FY 2020, 2 VE Studies were conducted on 2 projects. Both projects were over $50 million. A total of 4 VE Studies were implemented including two that were held the previous fiscal year. There was a total of 38 recommendations, of which 25 were implemented. The total approved savings were $23 million. For every dollar GDOT spent, $101 was saved.

In FY 2021, there were no projects that were eligible for a VE Study. One VE Study was implemented. There was a total of 9 recommendations of which 0 (none) were implemented. There were no savings.

In FY 2022, 8 VE Studies were conducted on 8 projects. All projects were over $50 million. A total of 8 VE Studies were implemented including two that were held the previous fiscal year. There was a total of 76 recommendations, of which 38 were implemented. The total approved savings were $19 million. For every dollar GDOT spent, $24 was saved.

In FY 2023, 4 VE Studies were conducted on 4 projects. All projects were over $50 million. A total of 4 VE Studies were implemented including two studies held the previous fiscal year. There was a total of 27 recommendations, of which 8 were implemented. The total approved savings was $5 million. For every dollar GDOT spent, $51 was saved.

In FY 2024, 7 VE Studies were conducted on 8 projects. A total of 6 VE Studies were implemented. There was a total of 57 recommendations, of which 26 were implemented.

The total approved savings was $34 million. For every dollar GDOT spent, $60 was saved.

In FY 2025, 11 VE Studies were conducted on 16 projects. Two bridge projects were over $40 million, and all other projects were over $50 million. A total of 6 VE Studies were implemented. There was a total of 53 recommendations, of which 19 were implemented. The total approved savings was $3 million. For every dollar GDOT spent, $35 was saved.

Notes:

1. A VE study can be conducted in one fiscal year but not implemented until the next fiscal year due to delays in the review and approval process which can include requested revisions from the Director of Engineering or Chief Engineer's office.
2. Return on investment (amount saved) can vary year by year depending on the recommendation and whether it is implemented. Some recommendations have a higher savings potential than others and it varies by project type and the constraints of the project. The timing of the VE study can also affect the recommendations and likelihood of implementation. VE study recommendations are not always implemented due to various reasons like causing project/schedule delays, conflicts with the design intent or requirements, resistance to change from stakeholders and/or increased life-cycle costs.
3. From 2013, projects with a total cost greater than $50 million require a VE study. If there are no VE studies in a fiscal year, it is because there were no projects that were eligible.