

# Proposal to Build a Smart Scale Analysis Tool for Evaluating Prospective Projects

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## I. Introduction and Project Concept

The Virginia Smart Scale is a recently-adopted methodology to provide objective cost-benefit comparison of transportation projects competing for state funding. In order to better understand the likelihood that potential projects will gain funding, and to also understand how altering different project aspects will impact the likelihood of funding, we are proposing to build a Smart Scale project evaluation tool. This tool is envisioned as a password-protected web application which would allow users to enter or upload data on potential projects and then explore the resulting smart scale scores as well as the likelihood of gaining funding. The tool will furthermore support scenario analysis by allowing users to vary parameters and see the impact on Smart Scale scores and chances of obtaining funding. In order to estimate funding likelihoods, the tool will utilize historic data and corresponding results from earlier Smart Scale rounds.

## II. Project Scope & Key Capabilities

The following capabilities are envisioned for the software system:

1. *A Web-Based Tool:* The tool will exist as a web-based software application. As such, it will provide both administrator and regular user accounts. Administrators will have the ability to create and modify password-protected accounts for users.
2. *Ability to See Smart Scale Scores and Funding Probabilities for Prospective Projects:* Users will be able to see the Smart Scale scores and funding likelihoods for prospective projects, based on both historical data as well as user-specified assumptions. Both overall Smart Scale scores as well as the scores for the individual project components will be shown.
3. *Ability to Explore Hypothetical Scenarios:* Users will be able to interactively vary parameters of projects under consideration and see the immediate impact on Smart Scale Scores and funding likelihoods. Users may also explore the impact of changing parameters in the historical data as well as restricting the historical data to specified subsets (for example: removing certain projects from historical data to see how it impacts prospective project funding likelihoods, or considering data only from specified Smart Scale rounds).
4. *Ability to Add Historic Smart Scale Data:* As more Smart Scale rounds occur, the new project data and results can be incorporated into the tool. As more data amasses, the accuracy of predictions will continue to increase.
5. *Ability to Enter and/or Upload Prospective Project Data:* Users will have the ability to upload individual prospective projects and/or project sets for evaluation.

### III. Project Timeline and Cost Estimate

The system as proposed is expected to take approximately 4.5 months to complete in total and will cost<sup>1</sup> approximately \$69,000. A proposed timeline is shown in the table below.

<b>Phase</b>	<b>Estimated Duration</b>	<b>Key Milestones or Deliverables</b>	<b>Expected Cost</b>
Phase 1: Requirements	0.5 Months	1. Pre-development meeting to agree on project scope, requirements, deployment environment, and engagement terms 2. Project contract signed, commencement of software development	\$ 7,800.00
Phase 2: System Design	1 Month	System Design Documentation Complete	\$ 15,700.00
Phase 3: System Development	2 Months	Initial Software Code Base Complete	\$ 31,400.00
Phase 4: Testing	0.5 Month	1. Acceptance Testing Complete 2. Finalized Software Code Base Complete	\$ 6,300.00
Phase 5: Deployment	0.5 Months	Deployment of System Into Live Environment	\$ 7,800.00
<b>TOTALS</b>	<b>4.5 Months</b>		<b>\$ 69,000.00</b>

Finally, it should be stated that the project scope and plan proposed in this document are malleable, and further discussions are anticipated. The final project scope and plan will be negotiated and agreed upon after further discussion.

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<sup>1</sup> The cost estimate excludes any recurring web hosting fees.