Request for Research Funding for FY 2021-2022			
Requesting Office	Environmental District 6	**Priority** **1**	# of # (projects may not have the same ranking – no ties) 1 of 1
Proposed Title	All projects must have a title **Opaque visual barriers use on road shoulders to minimize visual impacts and improve aesthetics.** Use of opaque visual barriers on road shoulders to minimize visual impacts and improve aesthetics as viewed from adjacent communities, especially when landscaping opportunities are limited or not available. Alternatively, utilizing one of the FDOT standard traffic railing barriers greater than 3-feet tall may also be considered.		
Justification	Describe the current situation, why the research is needed, and how the research affects your office's mission critical focus areas. Background: Currently, Section 264.3 of the FDOT Design Manual allows the use of perimeter walls when requested by local governmental agencies to provide a visual barrier between a highway and adjacent properties when noise abatement is not recommended, although they are not intended to provide any measurable noise reduction. Perimeter walls are limited to a total wall height above the ground of 8-feet. The location of perimeter walls is limited to outside the clear zone applications, and as close as practical to the right-of-way (ROW) line. Properties benefited by a perimeter wall should be within 150 feet from the edge of the outside travel lane. These requirements make the use of perimeter walls impracticable for use when the elevation between the road and the impacted properties is significant. Since perimeter walls are designed to be used outside the clear zone, their use is not allowed at the edge of shoulder, on structures, or on retaining walls associated with elevated roadways. At present, there are no formal options for providing a crash worthy visual barrier on a structure or retaining wall along the edge of the outside shoulder of an elevated roadway. Since perimeter walls are intended to be used outside the clear zone (along the ROW line), they are not an alternative in these scenarios. There is a need to examine a structurally viable option for an Opaque Visual Barrier that can be used within the clear zone, specifically on structures and retaining walls, especially on elevated roadways. These could be considered when communities along the roadside demand an alternative physical barrier to improve aesthetics when a noise barrier or other features such as dense landscaping are not recommended. In addition, a procedure should be developed to implement opaque visual barriers at roadside shoulders for aesthetics under these circumstances (i.e., elevated roadways where perimeter walls do not block the line of sight). Such a procedure should include factors to consider when the visual barrier can be used, the type of projects and type of facilities that they can be used on, the minimum distance to adjacent structures, highway visibility from adjacent properties, maximum cost and height, as well as other restrictions for their use and potential funding. Objective: We want to design transportation facilities that avoid, minimize and, when needed, mitigate project impacts to the greatest extent possible. This research is to explore other applications of the use of Opaque Visual Barriers (Index 521-010 Standard Plans for Road and Bridge Construction) on shoulders where noise abatement or other features such as dense landscaping has not been recommended for locations where guard rail or concrete barrier walls (traffic railing) are proposed on interstates/freeways. Use of Opaque Visual Barriers are not intended to provide any measurable noise reduction nor as noise abatement. Currently, the FDOT Design Manual (Section 215.5.1.2) allows the use of Opaque Visual Barriers on top of median concrete barrier and traffic railing to reduce headlight glare from opposing traffic lanes. Opaque Visual Barriers can be considered on limited access facilities that have glare issues when the facility has high-traffic volumes and a separation between opposing traffic lanes is 26 feet or less.		
Impact	How shall the results impact practice? Consequences of not doing the research? Currently, there are no formal options for providing a crash worthy visual barrier on a structure or retaining wall along the edge of outside shoulder similar to the Opaque Visual Barrier currently used for median barrier walls. The FDOT has no official standardized alterative to provide visual barriers on shoulders when communities demand an alternative to minimize visual impacts and improve aesthetics, especially along interstates/freeways. By standardizing an approach to build Opaque Visual Barriers in expanded manner to include aesthetics, more communities may benefit statewide and improve public perception of FDOT projects, especially in those with limited ROW. Without this procedure, Districts may propose Opaque Visual Barriers on shoulders inconsistently on projects (i.e., on a case-by-case basis), resulting in potentially unequal or disproportionate use of these barriers for various communities including low income and minority neighborhoods.		

Affected Offices	Identify any office and names of office personnel that will need to be involved in the scoping or conduct of the research, will be affected by implementation of the results, or will need to participate in the implementation process—including OTIT, if enterprise data/network software application will be a deliverable, and district staff, as appropriate, e.g., through statewide meetings. **If the requesting office will not be the implementing office, please identify which office and names of specific personnel which will have to serve in that capacity—have they been involved?** Office of Roadway Design, the Structures Design Office, and Construction Office together with their counterparts at the District Offices. They can interact with District Environmental and Planning/PD&E and Office of Environmental Management (OEM) personnel conducting or directing the research.		
Existing Work	Learning About and Using the Research in Progress (RiP) Database http://www.trb.org/main/blurbs/176215.aspx At a minimum, the Transportation Research International Documentation (TRID) and the Research in Progress (RIP) online databases should be reviewed by an expert in the research subject matter to assure research effort and resources shall not duplicate prior or ongoing work. TRID: https://trid.trb.org/Results RIP: https://rip.trb.org/		
Keywords Used In Existing Work Search **(Cannot leave blank)**	Visual barrier, retaining walls, headlight glare, crash test, roadside, clear zone, perimeter walls, opaque visual barrier, traffic railing barriers, aesthetics, landscaping.		
Related Contracts (Give contract numbers)	None.		
Funding Request	Estimated cost $80,000 to $100,000	**Anticipated Duration** **6 months**	Estimated length of time to complete work 6 months
Project Manager	Proposed technical manager to oversee research Robert McMullen, District 6 Noise Specialist.	**Contracting Method** Limiting amount	Anticipated procurement method (e.g., supplement to existing project, RFP to all registered vendors, direct contract with university) Supplement to FDOT In-house (District Wide) contracts or RFP.
Urgency	Score 1-5 1= highest, most immediate need	Comments* (elaborate as appropriate on justification/impact comments to explain the urgency of the need . . . is a solution needed immediately, needed within a certain period of time or by a known or anticipated deadline, desired for enhancement, etc.) In urbanized and suburban roadway corridors the rights-of-way (ROW) are often tightly constrained and dense landscaping or other aesthetic treatments are more and more difficult to justify and overcome limited ROW, engineering, and cost constraints. Citizens are complaining that the existing and proposed project impacts on quality of life for adjoining communities demand measures from proposed capacity improvement projects to minimize impacts from FDOT facilities.	
Implementability	Score 1-5 1=greatest likelihood of and proximity to implementing results	Comments* (consider both the likelihood of implementation and the length of time and resources required to implement the results of the research.) Identify any prerequisites to, requirements for, or barriers to implementing the anticipated results of this research (e.g., new or change to existing specifications, development of production units of prototype device, legislative change); please indicate if multiple phases of work shall be required. Highly implementable using current construction methods and there is no additional design involved since existing standard details for median Opaque Visual Barriers can be used. This is intended to be used when concrete barrier walls, traffic railing barriers, or guardrails exist or are proposed with the project where communities closely abut the project corridor.	

Project Benefits (Succinct, complete explanation)

Opaque Visual Barriers can be used on roadside shoulders to address community concerns related to visual impacts other than just vehicle headlight glare. Development of a roadside Opaque Visual Barriers procedure at outside shoulders will allow the FDOT greater flexibility to provide some additional types of visual barriers between traffic and communities where dense vegetation, noise barriers, or other visual treatments are not recommended. The use of Opaque Visual Barriers can help address the concerns of communities that have long requested FDOT minimization of project impacts to their quality of life near these facilities. In addition, the public perceives a reduction in traffic noise levels, especially tire noise, associated with use of these concrete barrier walls at roadside shoulders. Developing a standard procedure for the use of Opaque Visual Barriers on outside shoulders would allow consistency in their use statewide and streamline this process and to minimize future public inquiries and complaints along many FDOT facilities.

Project Benefits **(Select all that apply and explain)**	**Quantifiable Benefits (units, dollars, etc…if applicable)**	**Methodology or Data Sources Used to Determine Quantifiable Benefits. If not applicable, please give justification of project benefits**
○ Materials Enhancement	N/A	
○ Materials Savings	N/A	
○ Time Savings	Much time is spent replying to repetitive citizen complaints about quality of life, noise, etc. along FDOT facilities. Having this option can help provide relief more readily.	Actual experience with multiple urban and suburban corridors. Developing a standard procedure for the use of opaque visual barrier would also minimize changes to the design during construction to include opaque visual barriers due to concern from adjacent residences. This avoids delays and cost overruns once the project is in construction, especially with design-build projects.
○ Lives Saved/Injuries Prevented	N/A	
○ Other (Explain)	N/A	

*Comments should explain and support urgency, financial benefit, and implementability scores