

AESTHETIC PERFORMANCE METRICS

for Federal Transportation Infrastructure

Proposed Discussion Framework | Beautifying Transportation Infrastructure Council

PURPOSE OF THIS FRAMEWORK

The following metrics are proposed for the Council's consideration. They are organized under the five Principles for Beautiful Transportation Infrastructure (USDOT, 2026) and are designed to serve two functions: (1) evaluating grant applications and project proposals, and (2) direct insertion into program guidelines. Each metric includes a definition, a scoring approach, illustrative indicators, and guidance on how it may be updated over time.

The framework is grounded in two convictions. First, aesthetic judgments about public infrastructure should reflect the preferences of the communities that use and live with it — the general public — rather than the preferences of architectural or artistic professionals alone. Second, transportation infrastructure exists within a specific place, and its design should demonstrate genuine engagement with that place's landscape, building traditions, and cultural character. Both convictions point toward the same requirement: that designers document a serious, good-faith process of contextual inquiry before settling on a design approach, and that they demonstrate public support for the choices they make.

HOW TO USE THESE METRICS

Each metric category corresponds to one of the five DOT Principles. Within each category, metrics are presented at two tiers:

- Tier 1 – Threshold Criteria: Pass/fail requirements. A project that does not meet these does not advance for funding consideration.
- Tier 2 – Scored Criteria: Point-based criteria rewarding excellence above the threshold. Scores feed into comparative evaluation of competing applications.

Suggested scoring weight by principle:

Metric Category	Points (of 100)	Threshold Required?
1. Public Appeal & Uplift	25	Yes
2. Contextual Harmony	20	Yes
3. Architectural Heritage Engagement	25	Yes
4. Artistry & Craftsmanship	15	No
5. Functional Beauty	15	No

METRIC CATEGORY 1: PUBLIC APPEAL & UPLIFT

DOT Principle: "Uplift and Inspire Travelers — designs should aim for widespread appeal, aligning with the preferences of the general public."

The central challenge in aesthetic evaluation is avoiding the substitution of expert taste for popular preference. Transportation agencies have historically delegated aesthetic review to design professionals whose preferences may diverge from those of the communities served. These metrics anchor evaluation in documented public response rather than professional judgment alone.

1A. PUBLIC PREFERENCE DOCUMENTATION [Tier 1 — Threshold]

Definition	Applicant must demonstrate that design choices were presented to and evaluated by members of the public who will regularly use or live near the project, prior to final design selection.
Threshold	Pass: Applicant provides documentation of at least one structured public preference exercise (visual preference survey, design charrette with recorded outcomes, or equivalent) presenting actual design alternatives. Fail: No documented public input on visual design, or input limited to general project support without evaluation of specific design options.
Indicators	Visual preference survey with representative sample; recorded votes or rankings from public design review sessions; independent polling comparing design alternatives. Assertions of general community support without design-specific input do not satisfy this threshold.
Notes	The preference exercise must present genuine design alternatives — including alternatives representing the range of approaches traditional to the region — not simply ask whether the public supports the project. Side-by-side visual comparisons of at least two substantively different design approaches are required.

1B. PUBLIC PREFERENCE SCORE [Tier 2 — Scored, 0–15 points]

Definition	Degree to which the selected design was preferred by the public over alternatives tested.
Scoring	15 pts: Preferred by 70%+ of respondents over alternatives presented 12 pts: Preferred by 55–69% 8 pts: Preferred by plurality but less than 55% 4 pts: Public input documented but preference inconclusive 0 pts: Threshold not met
Indicators	Preference survey results; public meeting records with documented design votes; independent polling results.
Notes	Surveys administered solely to self-selected design-meeting attendees receive reduced weight. Applicants are encouraged to use representative sampling. The alternatives presented in the preference exercise must include at least one option reflecting the regional architectural heritage documented in the Heritage Engagement Narrative (Metric 3A).

1C. DESIGN INTELLIGIBILITY [Tier 2 — Scored, 0–10 points]

Definition	The degree to which the design is visually comprehensible and purposeful to the general public — as opposed to requiring expert interpretation or curatorial description to convey its intent.
Scoring	10 pts: Design is immediately legible; ornamental or expressive elements have discernible meaning; visual hierarchy is evident to lay observers 6 pts: Design is generally legible with some elements requiring contextual explanation 3 pts: Design is predominantly abstract or conceptual; intent requires explanatory text 0 pts: Design is visually incoherent or alienating to lay observers
Indicators	Review by an independent lay panel; documented public responses to design imagery during the preference process.
Notes	Designs that depend primarily on artist statements or designer explanations to achieve meaning score lower. Infrastructure should communicate through its physical form to the people who encounter it daily.

METRIC CATEGORY 2: CONTEXTUAL HARMONY

DOT Principle: "Harmonize with the Surrounding Landscapes — integrate seamlessly with built and natural surroundings, reflecting local context, character, and landscape."

2A. LANDSCAPE AND SETTING INTEGRATION [Tier 1 — Threshold]

Definition	The design must demonstrate explicit response to the natural and built landscape of its specific setting — topography, vegetation, hydrology, and existing built fabric.
Threshold	Pass: Design narrative documents context analysis and explains how specific design choices respond to it. Fail: No context analysis provided, or design shows no discernible response to its setting.
Indicators	Context analysis drawings or maps; materials selections tied to local geology or landscape character; documentation of site visits and resulting design responses; photomontages showing design in its setting.

2B. MATERIALS AUTHENTICITY [Tier 2 — Scored, 0–10 points]

Definition	The degree to which the materials palette reflects regional building traditions and prioritizes durable, contextually appropriate materials over generic or industrial substitutes.
Scoring	10 pts: Predominant use of materials with demonstrated regional precedent — natural stone, brick, timber, bronze, cast iron, tile, or other materials with a documented history of use in the region 7 pts: Mix of regionally traditional and other quality materials 4 pts: Some contextual materials used alongside generic industrial materials 1 pt: Generic materials throughout with no regional character 0 pts: Materials actively conflict with regional character
Indicators	Materials schedule with sourcing documentation; photographs of regionally comparable structures using similar materials; durability and maintenance cost documentation.
Notes	Synthetic replicas of traditional materials receive reduced scores relative to authentic materials of equivalent durability. Applicants should document expected lifespan and maintenance requirements for all primary materials.

2C. RURAL AND SMALL COMMUNITY RESPONSIVENESS [Tier 2 — Scored, 0–10 points]

Definition	For projects in rural areas or small communities, the degree to which the design reflects the vernacular building traditions and landscape character of the specific region rather than defaulting to urban or generic design conventions.
Scoring	10 pts: Design is distinctly rooted in the specific regional vernacular; avoids urban or generic design conventions 6 pts: Design reflects regional context but blends vernacular with generic elements 3 pts: Minimal regional character 0 pts: Urban or generic design applied to rural or small-community setting without contextual adaptation N/A: Urban or suburban project setting
Indicators	Design narrative citing specific regional exemplars; visual comparisons to documented vernacular structures; community input from local stakeholders.

Notes

Regional vernacular traditions vary widely — from covered-bridge construction in New England to adobe and mission-influenced building in the Southwest to timber framing in Appalachia. This metric rewards designs that identify and respond to the specific tradition of their site rather than applying a regional style superficially.

METRIC CATEGORY 3: ARCHITECTURAL HERITAGE ENGAGEMENT

DOT Principle: "Complement Local Architectural Heritage — incorporate elements inspired by historical architectural exemplars widely regarded as iconic and representative of the area."

This category requires that applicants document a genuine, good-faith process of engagement with the architectural heritage of the project's region before arriving at a design approach. It does not prescribe any particular architectural style. It requires that the range of approaches historically associated with the region — including classical, traditional, vernacular, and other established design traditions — be seriously investigated and either drawn upon or departed from for reasons documented in the application.

This requirement reflects the DOT Principle that transportation infrastructure should 'complement popular regional and cultural architectural influences, incorporating elements inspired by historical architectural exemplars.' Compliance with this principle cannot be demonstrated without evidence that those exemplars were identified, studied, and substantively considered.

3A. HERITAGE ENGAGEMENT NARRATIVE [Tier 1 — Threshold]

Definition	Applicants must submit a Heritage Engagement Narrative documenting their investigation of the architectural traditions historically associated with the project's region and explaining how those traditions informed the design.
Threshold	Pass: Applicant submits a Heritage Engagement Narrative of no more than five pages that: (a) identifies the architectural traditions historically associated with the project location, including classical, vernacular, and other regionally established styles; (b) names and illustrates at least two specific exemplary structures in the region that embody those traditions; (c) explains how the proposed design draws upon, adapts, or consciously departs from those traditions; and (d) documents how this investigation was developed in consultation with community members, local historical societies, preservation organizations, or comparable bodies with knowledge of regional heritage. Fail: No Heritage Engagement Narrative submitted; narrative identifies exemplars but does not explain the relationship between those exemplars and the proposed design; or narrative dismisses regional traditions without project-specific justification.
Indicators	Precedent studies with annotated analysis; documentation of consultations with local preservation or historical bodies; design drawings annotated to show relationship to identified exemplars.
Notes	A narrative that identifies the regional tradition and then explains, with project-specific reasoning, why a different approach was chosen nonetheless satisfies this threshold. A reflexive or generic dismissal of regional heritage (e.g., 'classical design is not appropriate for contemporary infrastructure') does not. The strength of the departure justification affects the scored metrics below.

3B. QUALITY OF HERITAGE ENGAGEMENT [Tier 2 — Scored, 0–15 points]

Definition	The depth, specificity, and substantiveness of the applicant's engagement with the regional architectural heritage as documented in the Heritage Engagement Narrative and reflected in the proposed design.
Scoring	15 pts: Design comprehensively draws upon identified regional exemplars; specific formal, material, or ornamental elements traceable to the documented regional tradition are incorporated; the relationship between heritage research and design decisions is explicit and detailed 11 pts: Design substantially reflects identified heritage; most major design choices are traceable to the heritage investigation 7 pts:

Indicators	Design reflects heritage in significant elements but departs from it in others without full documentation of the rationale for departures 3 pts: Heritage Engagement Narrative identifies exemplars but the proposed design shows little traceable relationship to them 0 pts: Threshold not met Side-by-side comparison of design elements with identified regional exemplars; annotated drawings explaining heritage-derived choices; specificity of the heritage investigation (number and quality of exemplars studied, depth of consultation with preservation bodies).
Notes	High scores require a demonstrable connection between the heritage investigation and the design decisions — not simply a parallel narrative. A design that scores highly under this metric has been visibly shaped by the heritage inquiry, regardless of the resulting style.

3C. ORNAMENT AND SURFACE ENRICHMENT [Tier 2 — Scored, 0–10 points]

Definition	The degree to which the design incorporates purposeful ornament, figural elements, or decorative programs — derived from or responsive to the regional heritage documented in the Heritage Engagement Narrative — that enrich the built surface and convey cultural meaning.
Scoring	10 pts: Rich ornamental or decorative program with elements traceable to the documented regional heritage tradition; figural, symbolic, or narrative content present 7 pts: Meaningful decorative elements present and connected to heritage documentation, though limited in scope 4 pts: Decorative elements present but primarily generic or abstract, without documented connection to regional heritage 1 pt: Minimal surface treatment 0 pts: Deliberately bare surfaces
Indicators	Design drawings with ornamental elements identified and sourced; specifications for decorative programs; identification of craftspeople or artisans with relevant expertise.
Notes	Ornament scores higher when it is integral to the design and traceable to the heritage investigation, rather than applied as an afterthought. The regional tradition itself determines the appropriate form: carved stone detailing in a Romanesque-influenced region, tilework in a Southwest context, wrought ironwork in a Southern vernacular context, and so forth.

METRIC CATEGORY 4: ARTISTRY & CRAFTSMANSHIP

DOT Principle: "Incorporate Art and Design Features — refined finishes, lighting, art installations, ornamentation, and the like, with discernible attention to detail."

4A. ARTIST AND CRAFTSPERSON SELECTION PROCESS [Tier 2 — Scored, 0–8 points]

Definition	The process by which artists and craftspeople are selected, with preference for processes that incorporate community input on artistic direction and evaluate candidates based on demonstrated mastery of techniques relevant to the regional heritage identified in Metric 3A (heritage engagement narrative).
Scoring	8 pts: Selection process included community input on artistic direction and evaluated candidates' demonstrated mastery of techniques appropriate to the regional heritage tradition; selection criteria were documented and publicly available 5 pts: Open, competitive selection process with community input on artistic direction but without explicit reference to regional heritage techniques 2 pts: Standard procurement process with no community input on artistic direction 0 pts: No art or craft component
Notes	Percent-for-art programs that select artists solely on the basis of professional reputation, without reference to community preferences or the heritage investigation documented in Metric 3A, score at the lower end of this range.

4B. ART CONTENT AND PUBLIC ACCESSIBILITY [Tier 2 — Scored, 0–7 points]

Definition	The degree to which art installations are visually accessible to general audiences — depicting subjects drawn from local history, natural heritage, or community life that can be apprehended without specialist knowledge — and the extent to which the subject matter was determined through documented community input.
Scoring	7 pts: Art content is figurative or narrative with subjects drawn from documented local history, landscape, or community identity; subject matter was developed through documented community input 5 pts: Art content is figurative or representational; community input on subject matter documented but limited 3 pts: Semi-abstract work with discernible references; community input minimal 1 pt: Purely abstract work 0 pts: No art component
Notes	This metric does not prohibit abstract art. It awards higher scores to art whose content was developed in dialogue with the community it will serve and that is visually accessible to general audiences without specialized art-world knowledge.

METRIC CATEGORY 5: FUNCTIONAL BEAUTY

DOT Principle: "Harness Form to Advance Function — designs should anticipate human needs, with function emerging intuitively from form."

5A. HUMAN SCALE AND PEDESTRIAN EXPERIENCE [Tier 2 — Scored, 0–8 points]

Definition	The degree to which the design is calibrated to the human body and the pedestrian experience, providing visual interest, shelter, and legibility at walking pace, not only at vehicular speed or aerial scale.
Scoring	8 pts: Design explicitly addresses pedestrian experience; visual interest is sustained at eye level; weather protection, seating, and wayfinding are integrated; scale of decorative elements is calibrated to pedestrian encounter 5 pts: Design is pedestrian-aware but primarily scaled to vehicular or aerial perception 2 pts: Minimal attention to pedestrian experience 0 pts: Design is indifferent or hostile to pedestrian experience
Indicators	Eye-level renderings and section drawings; pedestrian circulation analysis; shelter and seating documentation.

5B. DURABILITY AND MAINTENANCE INTEGRITY [Tier 2 — Scored, 0–7 points]

Definition	The degree to which materials and construction details are selected for longevity and graceful aging, and the extent to which aesthetic maintenance requirements are identified and funded as part of the project.
Scoring	7 pts: Primary materials have documented 75-year or longer expected service life; details are designed to drain water and resist staining; a maintenance plan for aesthetic elements is included and funded within the project budget 5 pts: Durable primary materials with adequate maintenance planning 2 pts: Standard materials selection; no funded maintenance plan for aesthetic elements 0 pts: Materials with known rapid degradation characteristics, or maintenance requirements not funded
Notes	Infrastructure that cannot be maintained in good appearance degrades public confidence and community pride. This metric rewards designs whose beauty is durable — that will remain attractive with the maintenance budgets realistically available to the operating agency.

MODIFYING METRICS OVER TIME

A performance metric system must balance stability — applicants need predictable rules — with the capacity to improve as evidence accumulates. The following framework governs periodic review.

Annual Administrative Review — Program Office Authority

Each operating administration incorporating these Metrics shall conduct an annual administrative review of the metric language applicable to its programs, addressing:

- Indicator language that has generated inconsistent interpretation in application review
- Infrastructure types or project contexts not adequately addressed by existing metric language
- Technical updates required by changes in materials, construction practice, or related federal standards
- Conflicts or redundancies with other program requirements that create undue applicant burden

Administrative revisions that do not alter point weights or Tier 1 threshold requirements may be made by program staff through standard guidance update procedures. This review function is assigned to the relevant program office and does not depend on the existence of any advisory committee.

Five-Year Substantive Review — Secretary-Directed

A substantive review of metric weights, thresholds, and overall framework design shall be conducted no less than every five years. This review shall be conducted by the relevant program offices and shall draw on:

- Post-occupancy evidence: A sample of completed projects funded under these Metrics shall be assessed through community surveys measuring whether the communities served perceive the projects as beautiful and contextually appropriate. This evidence base makes the framework self-correcting over time.
- SHPO network input: State Historic Preservation Offices have a statutory role in federal transportation review and an institutional permanence independent of any administration. Their assessment of whether heritage engagement requirements are functioning as intended is essential to the five-year review.
- Applicant and program office experience: Operating-level feedback on where applicant burden is disproportionate to benefit, and where requirements have produced intended or unintended outcomes.

The five-year review cycle shall be written into the program guidance itself as a standing self-review obligation, binding on successive program administrators.

APPLICATION ACROSS TRANSPORTATION MODES

The metrics above apply across all modes. The following table notes mode-specific emphasis and application guidance.

Mode	Metric Emphasis and Mode-Specific Guidance
Bridges & Overpasses	Metrics 1B (public preference), 3B (quality of heritage engagement), and 3C (ornament) carry greatest weight. The Heritage Engagement Narrative must address the documented traditions for bridge design in the region — masonry arch construction, truss typologies, decorative railing and pylon treatment, and so forth. The Merritt Parkway bridges and Robert Street Bridge illustrate how heritage engagement can produce structures of lasting public appreciation.
Transit & Mobility Hubs	Metrics 1B (public preference), 3A (heritage engagement narrative), 3B (quality of heritage engagement), 4A (artist and craftsperson selection process), and 5A (human scale) carry greatest weight. Station design has the highest per-project public impact of any transportation building type. The Heritage Engagement Narrative must address the tradition of public assembly buildings in the region. Interior finishes, lighting programs, and art installations are evaluated with particular rigor under Category 4 (artistry and craftsmanship).
Corridors & Streetscapes	Metrics 2B (materials), 2C (rural responsiveness), and 5A (human scale) carry greatest weight. Street furniture, lighting standards, paving, and landscape treatment are all evaluated. Consistency of character along a corridor is a positive factor under Metric 2A (context analysis).
Gateways & Entries	Metric 3B (heritage engagement quality) carries greatest weight. The Heritage Engagement Narrative must specifically address the tradition of civic gateway design in the region. Monumental and commemorative design elements that have been documented as regionally established are appropriate subjects for the narrative.
Rural Infrastructure	Metric 2C (rural responsiveness) is elevated to Tier 1 status for rural projects. The Heritage Engagement Narrative must address the specific vernacular traditions of the project's rural region — not generic rural design conventions. Small bridges, culverts, retaining walls, and shelter structures are all subject to heritage engagement requirements.
Intermodal Connections	All five metric categories apply with equal weight. Metric 1C (design intelligibility) is elevated in importance given the navigational demands placed on users of intermodal environments.

INSERTING METRICS INTO PROGRAM GUIDELINES

For use in program guidelines, each metric should be expressed in three parts:

- Applicability statement: Which project types and funding programs the metric applies to
- Requirement language: The specific pass/fail or scored requirement, in regulatory-style prose
- Review process: Who evaluates the metric, using what evidence, with what appeal or reconsideration process

Model requirement language for Metric 3A (Heritage Engagement Narrative) as an example:

SAMPLE GUIDELINE LANGUAGE — Metric 3A: Heritage Engagement Narrative

Architectural Heritage Engagement. Applicants seeking funding for bridges, transit facilities, gateways, and other signature transportation structures shall submit a Heritage Engagement Narrative of no more than five pages. The Narrative shall: (a) identify the architectural traditions historically associated with the project location, including classical, vernacular, and other established regional styles; (b) name and illustrate at least two specific exemplary structures in the region that embody those traditions; (c) explain, with reference to specific design decisions in the proposed design, how those traditions have been drawn upon, adapted, or departed from; and (d) document consultations with local historical societies, preservation organizations, or other bodies with knowledge of regional architectural heritage.

A Heritage Engagement Narrative that identifies regional exemplars and makes explicit, traceable connections between those exemplars and specific design choices will receive the maximum score under Metric 3B. A Narrative that identifies exemplars but does not explain how they shaped design decisions, or that dismisses regional traditions without project-specific justification, will receive a reduced score. Failure to submit a Heritage Engagement Narrative, or submission of a Narrative that does not address the required elements, renders the application ineligible for funding consideration.

This framework is presented as a discussion draft. All metrics, weights, and threshold criteria are subject to revision. The goal is a system that is simultaneously principled and practical: one that reliably produces transportation infrastructure that the communities it serves find beautiful, that demonstrates genuine engagement with the architectural heritage of the regions it inhabits, and that improves over time as evidence from built projects accumulates.