U.S. Department of Transportation
BEAUTIFYING TRANSPORTATION INFRASTRUCTURE COUNCIL

Council Notes for Task 26-02: Developing Aesthetic Performance Metrics
The U.S. Department of Transportation (DOT or Department) asks the Beautifying Transportation Infrastructure Council (BTIC or Council) to provide feedback to DOT regarding metrics that can be cultivated to assess the aesthetic value of transportation infrastructure and facilities when considering the development of new or revitalization of existing transportation projects.

The Council structured the discussion around the following themes:

Defining basic metrics for evaluating infrastructure design aesthetics

- Should balance what design standards in aesthetics can be quantifiable versus what metrics are appropriate for a specific space given the local and historical context.
- Define and understand what a successful beautified transportation project is and how examples of successful projects can inform the way metrics could guide design standards.
- Evaluate how historical projects and their aesthetics achieved their purpose and intended uses both after completion and over time. Use these insights to inform new projects so that they meet their outcomes well into the future.
- Metrics should be objective and quantitative so that projects can be compared to one another, especially when it comes to competing for funding.
- Consider creating a set of baseline metrics that designers can apply to all modal transportation facilities.
- Develop indicators that help inform metrics. Frequency of use is an important indicator, but not the only or most important indicator for success.
- One metric could be about durability of aesthetics, evaluating if the infrastructure will age in place well. Some materials fade, rust, etc., which will eventually detract from the original intent of beautification. Metrics on material characteristics could be considered to mitigate this problem.
- Beautiful projects should provide an identity, place of pride and/or showcase history.
- Metrics should be tied to design principles, especially those that relate to the real world.
- Consider metrics based on qualitative information. For example, a metric based on how memorable a project is, whether people want to share it, and whether it has a lasting impact on visitors.
- Metrics could be the same across lifecycle of development, but how those metrics are captured or rated could change depending on where the project is in its lifecycle.

Requirements of Scale and Scope

- It may make sense to have a cut-off for design standards based on project scale or size. If not, all can be made beautiful then consider the viewshed (perspective of where someone might be from a specific location – e.g. on an interstate bridge as opposed to under it) and what components can be beautified.
- Transportation infrastructure is meant to be functional, and not all facilities can or should be beautified.
- Consider providing and/or requiring an educational component for receiving funding to help set standards for planning and designing projects. Such a component would inform

the public about the fundamentals of beautifying transportation projects and help set clear standards and expectations for project developers.

- Standards should be incorporated during initial scoping.
- Simple metrics and requirements may be easier to follow.
- Metrics and standards could be tiered so that the extent of scrutiny or requirements is based on the project characteristics (e.g. size, scale, funding level)
- While evaluating tiered standards it may be helpful to evaluate current transportation projects and how they would qualify. Would the Golden Gate Bridge be considered a national project? Would the Frederick Douglass Bridge be considered more of a functional bridge? Basing these decisions on geographic representation or jurisdiction can make it simpler for applicants or project planners. Possible three-tiered categories:
  - Tiers by functional capacity
    - Low tier – basic projects with little visibility or aesthetic potential, e.g. a highway overpass.
    - Medium tier – projects closer to historical and cultural centers.
    - High tier – high functional purpose or viewshed projects like the Golden Gate Bridge.
  - Tiers by impact based on number of people affected or economic importance
    - National
    - Regional
    - Local/City/County
  - Tiers based on extent of historical or cultural features, such as a sense of national or local ownership or a need to convey the project's significance.

Post construction performance metrics

- Design functional metrics, such as traffic volumes, and project performance over time.
- Aim for quantifiable metrics based on available and reliable data so that projects can be compared.
- Consider how well the project allows for future modifications, expansions and additions. This can help to reduce proportional costs in the future while meeting initial scope.
- A project's expected ability to adapt to changes, such as increased demand, changes in housing prices, or new development.
- Continuous evaluation of a project's meeting its intended goals over time and possible need for adjustments.
- Design based on how the public will use the space. For example, some pedestrian designs do not anticipate how people will get from one spot to another; e.g. a dirt trail through grass between two sidewalk segments.
- Over-design can be cumbersome and fail to meet project intent. Europe has examples of simple open design that allows for organic use and changes in need.

Metrics tied to the principles

- Metrics may be tied to the Council's original principles:

1. Uplift and inspire travelers.
2. Harmonize with surrounding landscapes.
3. Complement local architectural heritage.
4. Incorporate art and design features.
5. Harness form to advance function.

- Principle 2: Material authenticity – ensure that the materials and designs harmonize with the surrounding area
- Rural and small communities – signs rooted in the regional or local character.

Compliance with metrics and their intention

- Majority of transportation projects are designed and implemented by non-federal actors. Consider ways to ensure that designs and implementation reflect the standards initially set to encourage beautifying transportation. Create obligations or safeguards to ensure that funding to beautify projects is not cut or treated as an afterthought.
- Initial scoping defines the metrics and sets the guidance that will emphasize aesthetic values and the importance of incorporating them.
- Consider how previous programs that have principles and metrics for design, like the GSA Design Excellence Program, encouraged or achieved compliance with those standards.

Technology

- Technology and innovation should be leveraged in metrics and standards.
- Ensure that technology supports the intent of beautifying transportation infrastructure and is capable of being upgraded over time.

Examples Noted by the Council

- The General Service Administration's Design Excellence Program guidelines.
- Design Excellence program by the U.S. Department of State Bureau of Overseas Buildings Operations.

Noteworthy Practices Identified by the Council

- Federal Highway Administration's Context-Sensitive Solutions and Context-Sensitive Design; collaborative, multidisciplinary design philosophies and approaches to transportation planning that ensure roads, transit, and infrastructure seamlessly blend into their surrounding physical, environmental, and community contexts.

Council Recommendations

- Develop an educational component to help inform designers and developers on baseline beautifying standards in excellence.
- Develop different metrics that capture information for both pre- and post- project implementation.