The Indiana Approach Experience

Non-cost constrained ideas for a Context Sensitive Design Strategy for the Indiana Segment of the Louisville Southern Indiana Ohio River Bridges East End Approach Project

Issued March 17, 2010

storrow kinsella

The Indiana Approach Experience

Preliminary Context Sensitive Solutions Planning Document

Prepared by Storrow Kinsella Associates Inc for
Burgess & Niple Inc and Community Transportation Solutions (CTS)

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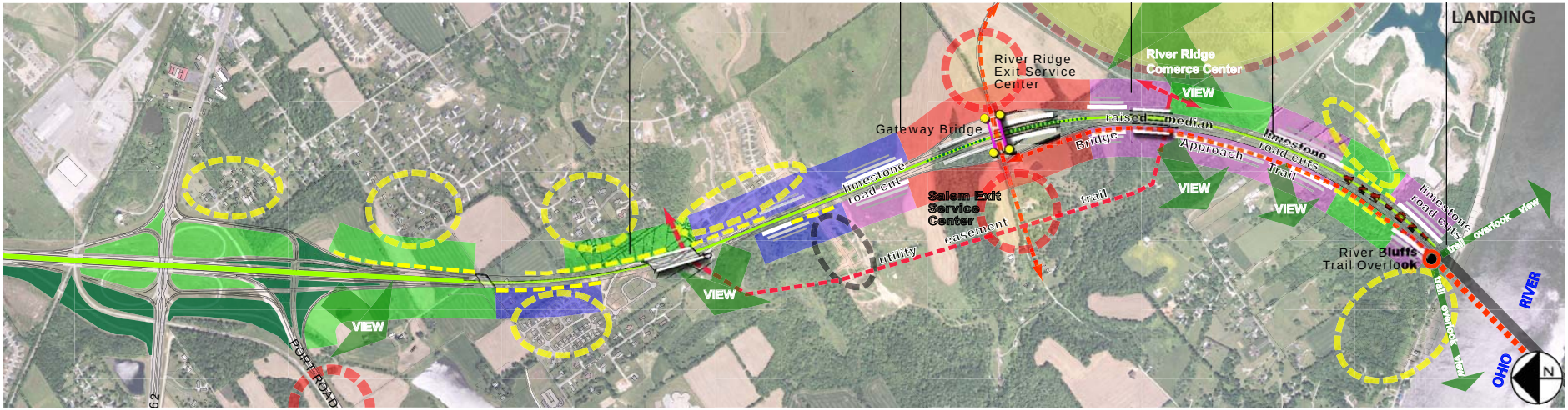
Abstract

This Context Sensitive Solutions preliminary report for the *Indiana segment of the Louisville Southern Indiana Ohio River Bridges East End Approach Project*[1] generates concepts and ideas, at a non-cost constrained initial level. Its purpose is to assist in final scope determination for CSS program fulfillment. Programmatic considerations address roadway elements, bridge elements, noise barriers, landscape and landforms, a multi-use trail system, and the Old Salem Road interchange. Additional ideas are presented regarding multi modal connectivity for corridor-proximate communities, and for development of public/private partnerships to endow long term sustainability of the proposed enhancements. Next steps include additional design and engineering coordination to establish the appropriate balance between need, cost, and benefits as the scope of CSS implementation is more narrowly defined relative to overall project commitments and funding. Once a final CSS scope is determined, additional visual simulation, including animation and drive-throughs of the selected CSS elements will be prepared for public and stakeholder agency presentations.

1 This report has adopted the short title "The Indiana Approach Experience" for this section of the overall Bridges project

Contents and Section Summaries

Section 1 **Introduction, Purpose and Goals**	A description of the CSS project purpose through five goals: to create an exceptional entry experience, to enhance travelers' awareness of Indiana's natural resources and economic development strengths, to mitigate highway noise impacts, to maintain multi modal connectivity between communities across which the corridor runs, and to create effective settings for exit area service and welcome center functions.
Section 2 **Proposed Themes**	Development of multiple themes based on the Cultural Landscapes of agriculture and history, southern Indiana geology, Indiana's industries and institutions, and real-time clean energy generation. The themes are expressed as recurrent design elements and landscape forms that unfold along successive sections of the highway verge.
Section 3 **Design Elements**	An examination of the adaptation of functional roadway design elements for expressing those Indiana themes: roadway elements (guardrails, median barriers, sign structures), bridge elements (overpass and underpass structures), noise barriers, land forms and landscape elements, and a multi-use trail system linking communities and the two states within a native landscape continuum.
Section 4 **Public Private Partnerships**	Exploration of a strategy for engaging major Indiana industries and institutions in a partnership for funding gateway enhancement implementation as well as for long term maintenance of its special landscapes and design elements.
Section 5 **Next Steps**	A process for defining the scope of implementation of the corridor's CSS elements, including determination of costs and value of benefits, technical reconciliation of adapted functional elements, exploration of sponsorship interest, and visual simulation of the corridor and its enhancements for identified agencies and stakeholders.
Technical Notes	Integration of CSS elements into the highway construction process.



The Proposed I-265 East End Approach

This CSS preliminary report concludes an exercise to generate ideas for the scope and direction of Context Sensitive Solutions (CSS) for the proposed Louisville Southern Indiana Ohio River Bridges East End Approach Project.

The study is non-cost constrained. It is, rather, an overview intended to stimulate discussion regarding the significance and appropriate expression of this new terrain interstate-level transportation facility as an innovative and state-of-the-art 21st century highway. It is informed by previous and ongoing studies that document historic and cultural resources, agricultural heritage, wildlife corridors and current but evolving land use patterns. Those studies have guided the initial planning and alignment of the proposed highway, which in turn establishes the physical framework for the elements of design of this Context Sensitive Solutions inquiry.

CSS is a process by which the fundamental transportation engineering of a new or upgraded facility is refined such that it not only operates optimally as a functional and safe transportation system, but that it also provides optimal user experience, serves commerce and economic development purposes, and does so with least harm, and hopefully greatest benefit, to the regions and communities that it engages.

The CSS process herein establishes goals that acknowledge the unique opportunities afforded by the I-265 new-terrain highway and its new Ohio River crossing, part of a larger plan to lessen the congestion impacts caused by the existing I-65 on the Louisville/ Clarksville metropolitan region. This facility will create a new gateway for both Kentucky and Indiana, while providing direct access to the six-thousand acre River Ridge Commerce Center, an urban enterprise zone on the site of a former army munitions plant adjacent to the corridor.

This study presents possibilities to create an exceptional new entryway for both states, and strategies for its sustainability at a high level.

Purpose and Goals

Purpose

The purpose of this study is multi-dimensional:

1

Creation of an exceptional and memorable welcoming experience and a positive departing experience for travelers entering or leaving Indiana via this new portal and river crossing.

2

Development of a visual narrative that conveys the multiple themes of Indiana's natural heritage, history, agricultural, culture and industry at a scale appropriate to interstate highway speeds and spatial characteristics.

3

Restoration of spatial and multi-modal transportation connectivity between existing and predictable future communities that would otherwise be separated by highway construction, and between the neighboring states of Indiana and Kentucky via the bridge and its linking trail.

4

Mitigation of noise impacts on contiguous residential development using sound attenuating structures and landscape elements that enhance rather than detract from the environmental design characteristics of those areas as well as of the highway itself.

5

Establishment of exit area settings that encourage high quality development of traveler services and that are effective gateways to the adjacent communities.

Primary design imperatives

Central considerations in the fulfilling of the foregoing purpose is that the CSS design elements enhance rather than diminish highway safety, that they are cost effective considering both tangible and intangible benefits, and that they are sustainable in the sense of acceptable life cycle and maintenance costs.

Additional guiding design parameters:

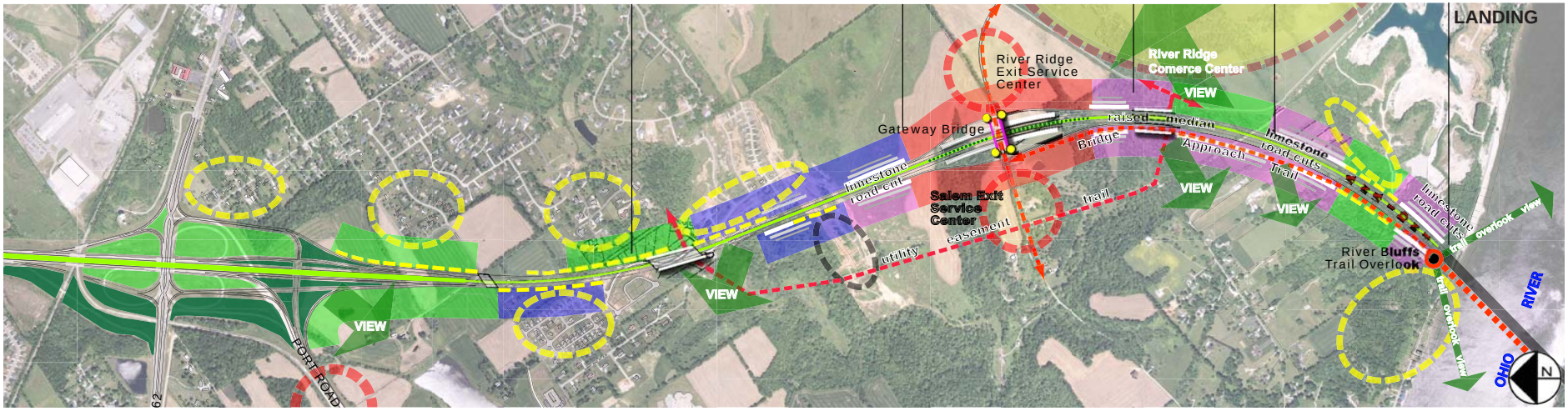
- That CSS elements be integrative with, rather than decorative add-ons to, the underlying project;
- That the primary basis for expressing these components be the required functional roadway design elements, including guardrails, median barriers, noise barrier walls, bridge overpass and underpass structures, as well as the underlying terrain and its necessary reshaping and landscape cover.

Innovative funding consideration

In the course of the study, considerations of the sustainability of the envisioned enhancements and their maintenance and life cycle costs, led to an additional project goal: investigation of economic development benefit-based revenue sources for long-term high-level maintenance of the enhancement elements.

Proposed Themes

The Cultural Landscapes of agriculture, forestry, history **Industry & Education** **Sustainable Energy** **Commerce** **Indiana Geology & Limestone**



The Proposed I-265 East End Approach

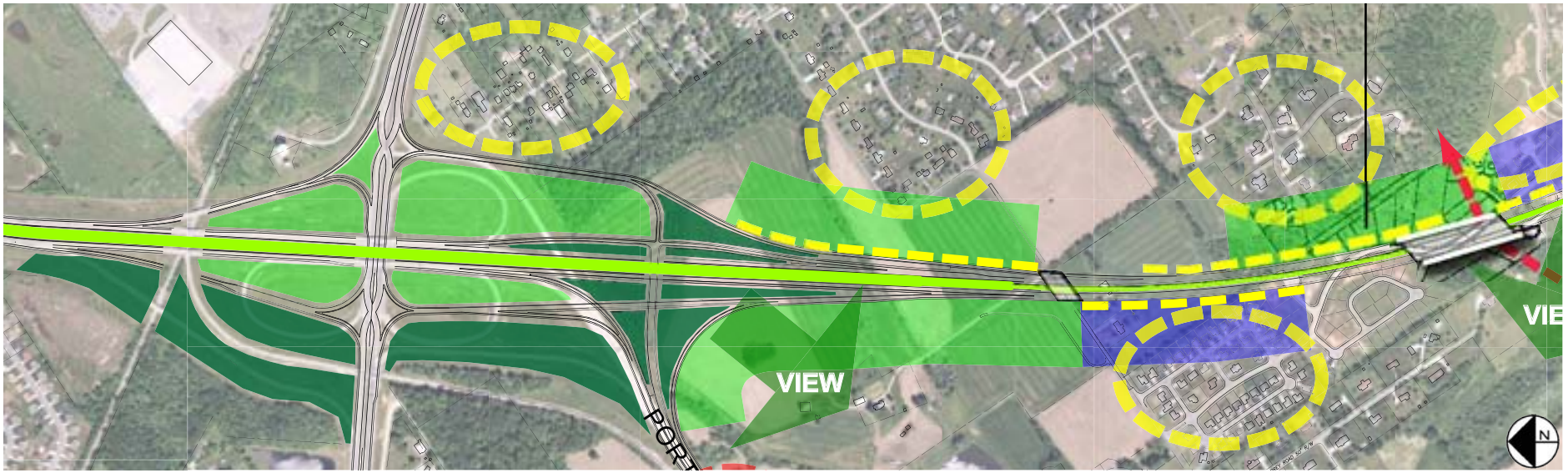
Multiple complementary themes are proposed that will tell the story of Indiana and this Ohio River Valley region to travelers arriving from Kentucky. It is a clean slate opportunity to create a positive image supportive of Indiana as a progressive state endowed with abundant natural resources, thriving agriculture, and modern industry.

The themes will be developed south to north and north to south for the respective travel lane directions, providing unfolding sequences of the themes. They will integrate with the constructed terrain and the remainder natural terrain of this "new terrain" facility. Starting with the Ohio River limestone bluff landing of the bridge, they progress through successive limestone rock cuts and valley-spanning fill areas. A common thread unifying the distinct theme areas will be a blend of native landscape plantings, woodlots and agricultural row plantings. They will be bordered by stylized agricultural fencing as a visible edge, by trail and right-of-way fence, or by limestone block outcroppings. The agricultural fence motif will repeat as a vine-covered trellis on noise barrier structures, softening their potentially jarring appearance.

The theme expressions include:

- *Cultural Landscapes* of agriculture/ forestry and history, predominately in the SR 62 Interchange. Historic reference will be repeated at a "Lime Kiln" and Bridge interpretive overlook along the multi-use trail
- *Industry and Education* between the two interchanges, as a tribute to the state's major industries and universities
- *Sustainable Energy* in the Salem Road interchange approach areas, in the form of vehicle actuated wind turbines and solar arrays that power interchange lighting
- *Commerce and Industry* in the River Ridge Commerce Center area
- *Indiana Geology* and *Limestone* at the initial and subsequent road cuts, and as recurring limestone elements at various structures and edges, such as noise

Theme: Cultural Landscapes



The theme of Indiana's cultural landscapes will be expressed within the corridor's varying right-of-way by composed and layered views of cultivated fields, grasslands, woodlot edges and tree plantations. Representation of historic elements (few of which survive in the corridor) will be explored as road-viewable forms impressed in large scale retaining wall elements or as three-dimensional sculptural forms at bridge ends. The telling of the cultural landscape story, as viewed from the road at highway speeds, will be necessarily associative rather than literal.

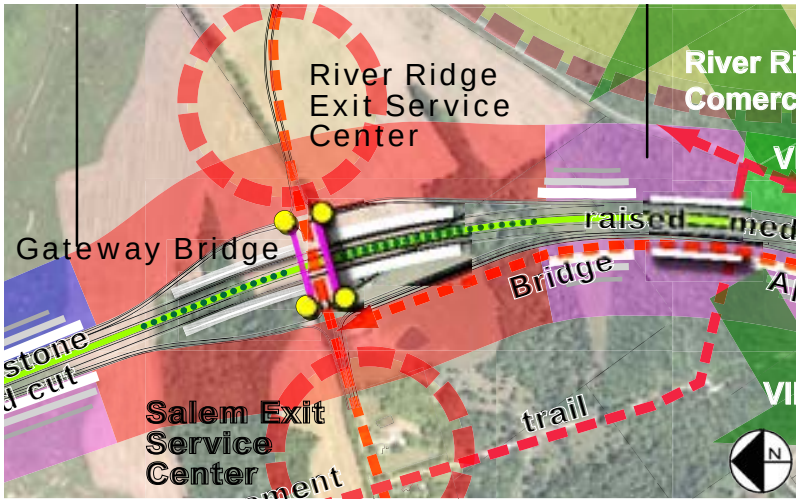
Opportunities for literal interpretation, however, will occur along the regional bicycle-pedestrian trail at its trailheads and overlooks, with trailheads being sited for vehicle accessibility and parking off the mainline for safety considerations.

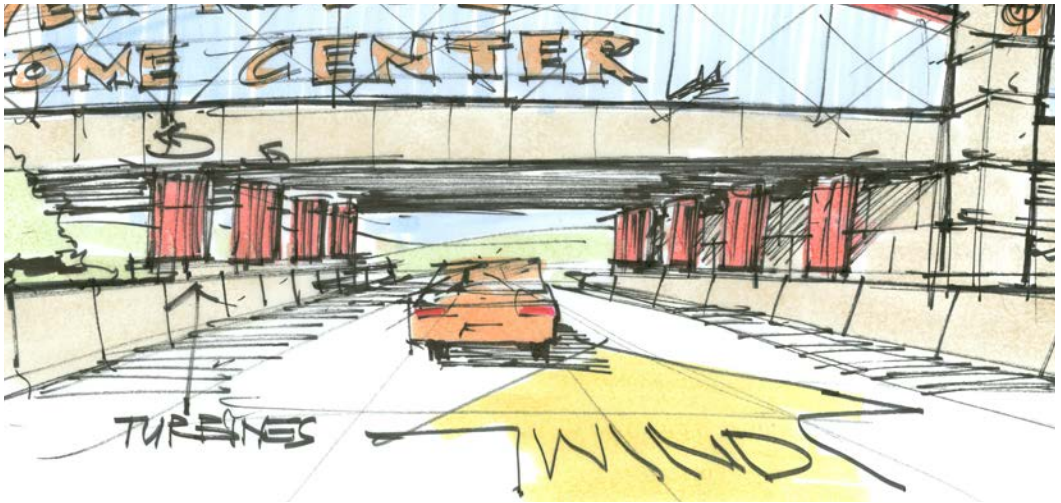
The primary spatial opportunity for large scale cultural landscape expression is within the SR 62 Interchange open space areas. Row crops and bordering stylized agricultural fencing, backed by linear or grove tree plantings will be established there, with terrain-shaping to maximize the layered and unfolding kinetic effect as experienced from moving vehicles.

These elements will extend southward through the corridor, expanding and contracting with right-of-way variations, but with a common thread of the stylized fence.

The need for driver focus and merge-area sightlines in "decision areas" of the interchange will be addressed and reinforced by careful terrain modeling and landscape element placement.

Theme: Sustainable Energy





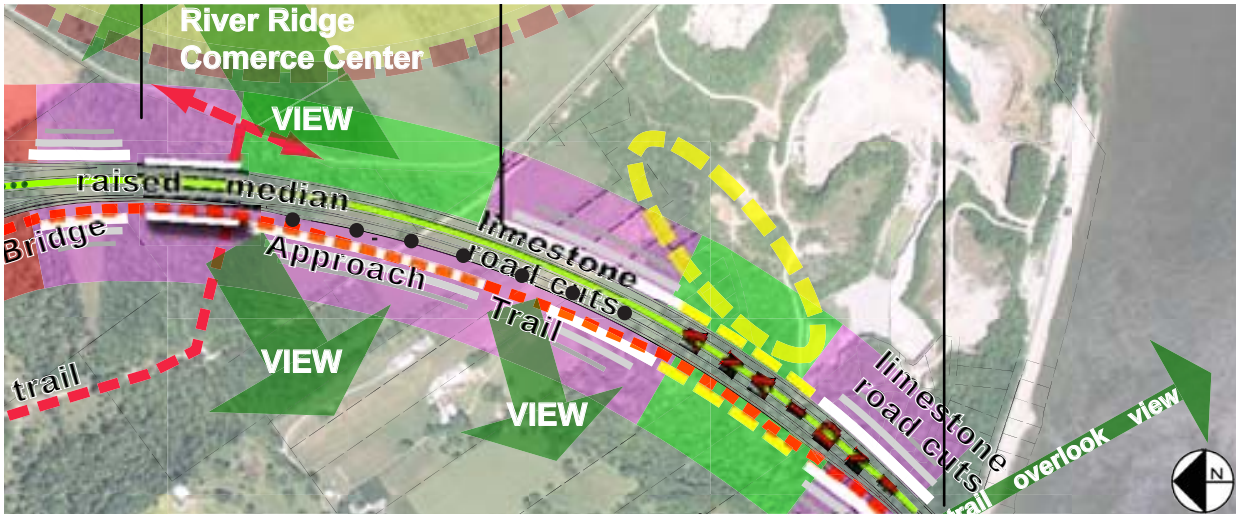
A "green" Welcome Center and a power generating bridge

A traveler passing over the new bridge from Kentucky will arrive minutes later at the *Utica-River Ridge Welcome Center* and sense that something new and innovative is happening in Indiana. With available grants and other development incentives, this introduction to Indiana can become a demonstration for new forms of sustainability on several levels:

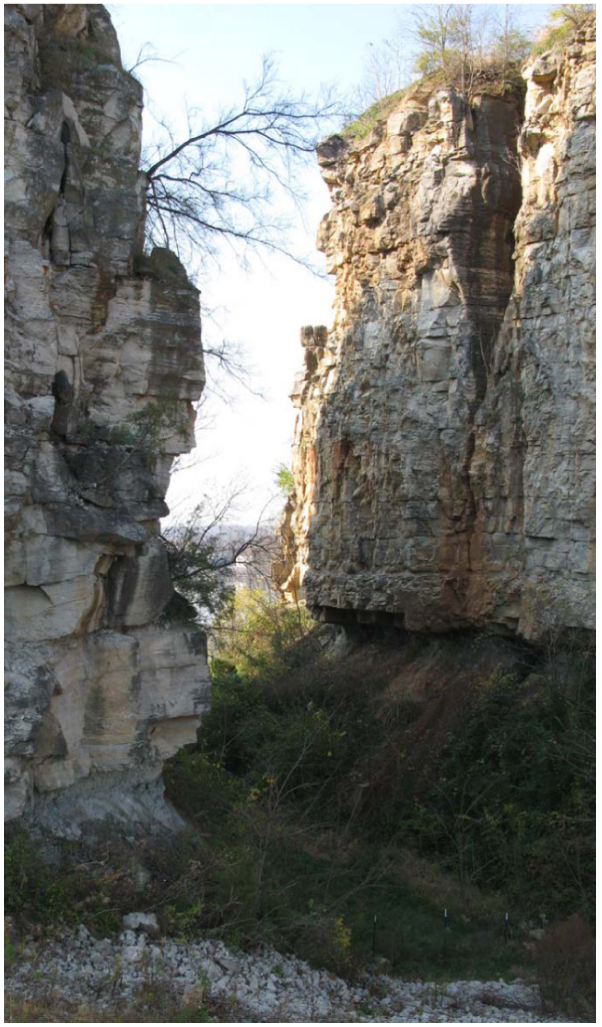
- Solar arrays on the south face of the Old Salem Road bridge would power its Welcome Center sign graphics.
- Parallel rows of vertical helical-vaned wind turbines within the bridge underpass's virtual wind tunnel would spin in reaction to the induced wind-streams of passing cars and trucks to power the districts area lighting, rain or shine.
- The Welcome Center's architecture and site development would exude high tech design imagery and green building technology, including storm water and waste water best management practices at a level that attracts both the architecture fan headed to Columbus, as well as the growing legions of eco-tourists.
- The Welcome Center would also be a trailhead for the *Over-the-Ohio* regional bicycle/hiking trail, providing cyclist services including rentals to ride back to the trail- accessible historic site and river overlook.

A project for the INDOT/Purdue University *Joint Transportation Research Program* would be eminently eligible for a combined grant from the Federal DOE and FHWA . It would entail the civil, electrical and aeronautical engineering departments in the research, design and post construction evaluation monitoring of a *vehicle-energized underpass-contained wind turbine array*, and its integration with a closed site system of multi-source power generation. The overall welcome center could be the subject of a DOE/HUD grant for a national competition for architecture schools for the design of a sustainable interstate welcome center building and its site. Innovative stormwater and wastewater management would be incorporated.

Theme: Indiana Geology and Limestone



The Indiana Approach experience will begin with the passage over the Ohio River bridge and its dramatic landing on the Indiana bluff . The geology of Indiana will be revealed by the St. Louis Limestone road cut that frames the unfolding highway ahead. That geology, as source for the state's best known product, Indiana Limestone, will be made evident by successive road cuts and by the deploying of large limestone quarry blocks for welcome sign bases, and other proposed linear elements throughout the corridor. Bedford Limestone is quarried 70-80 miles north of the project site, where almost unlimited supplies of large quarry block exist. The limestone industry has expressed interest in participating in the telling of its story along the corridor.



An existing old quarry cut in the limestone bluffs of the Ohio River, near the proposed bridge landing, indicates the St. Louis layer of limestone that would be revealed in several corridor road cuts.

Design Element: Cultural Landscape Theme

Agricultural fields and fencing, woodlots

Plantation grove of Tulip Tree Liriodendron tulipifera

A fence row of Tulip Tree, the Indiana State Tree

Agricultural fields as iconic Indiana landscapes

Grasses, with screening and noise mitigating pines

Wildflower meadows above, Lavender fields below

The theme of Indiana cultural landscapes will be expressed within the corridor's varying right-of-way by layered views of cultivated fields, grasslands, woodlot edges and tree plantations. A pattern-organized landscape of crop and vineyard rows, and tree rows and groves of a plot scale sufficiently large to discern repetitive patterns, will be threaded through the corridor by a continuum of naturalized landscapes of native grasses and wildflowers.

Sustainability will be addressed by a management plan similar to but clearly more sophisticated than typical right-of-way mowing regimens: wood lots and groves follow forestry management practices; row crops will be managed on a seasonal tilling, planting and harvest schedule. Native grasses and wildflower meadows are an accepted highway sustainability practice.

An innovative approach to management of this landscape creates a stewardship/sponsorship program that would partner Indiana's agriculture and forestry industries with the state's land grant university as a research and education initiative.

Design Element: Indiana Geology/Limestone Theme

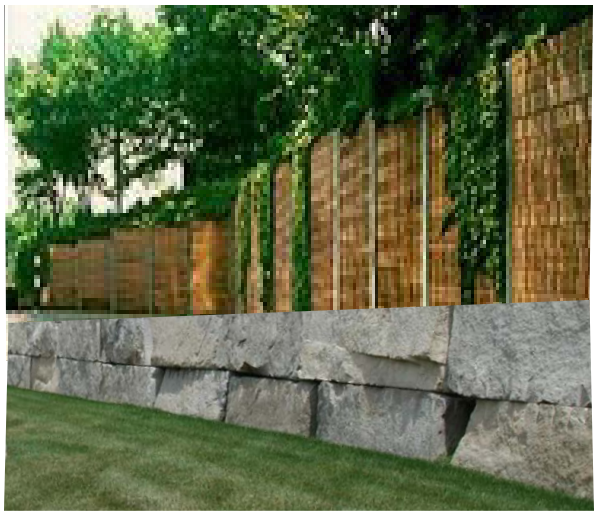
St. Louis limestone layer typical of road cut areas

Form liner variant of Limestone coursing

MSE wall variant of stone coursing on I-70

Indiana limestone below the St. Louis layer

5'x8' Indiana limestone quarry blocks

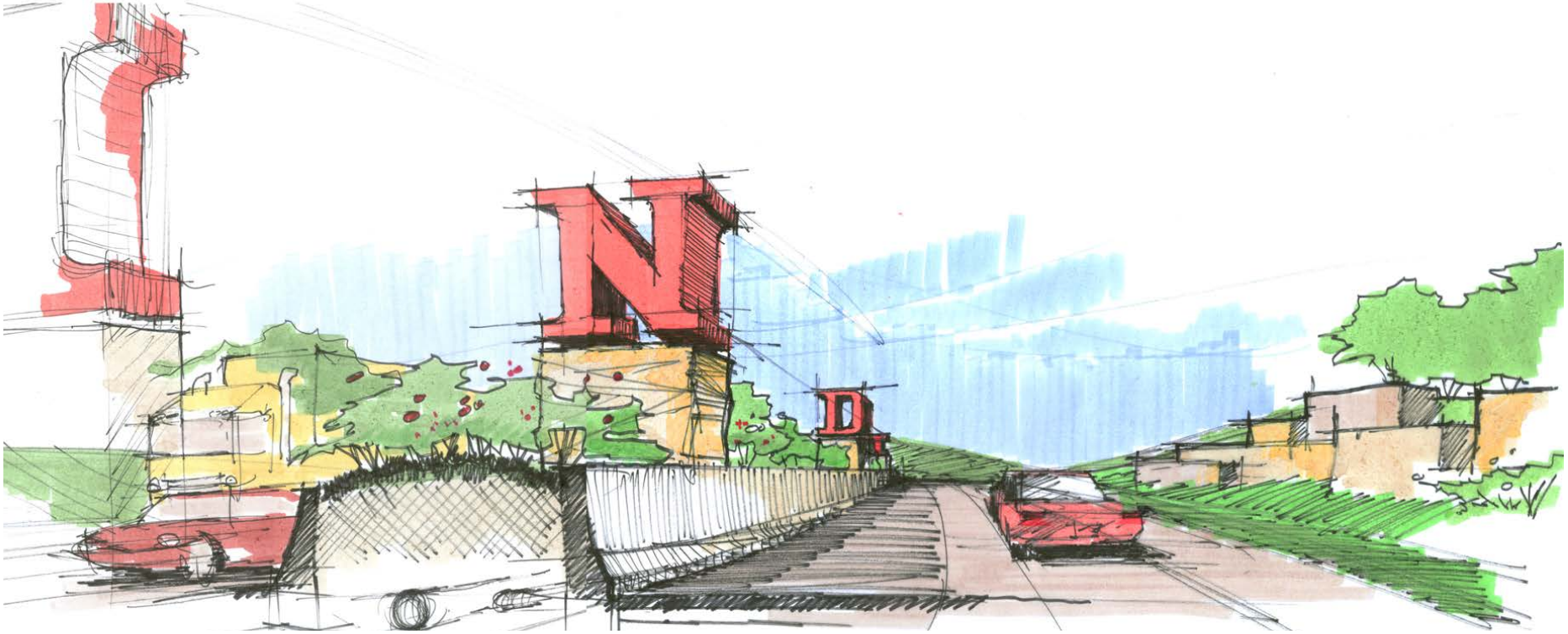


Limestone elements will also be utilized as a means to integrate and reduce the intrusive scale of noise barrier walls that will likely occur throughout the corridor. The composite photo above indicates such an application.

The proposed *Indiana Geology/Limestone* theme will be expressed by revealing the "St. Louis" limestone layer in several road cut areas starting north of the bridge landing. A base to that layer will be created by using stacked quarry blocks of Indiana Limestone. That motif will be repeated throughout the corridor as bases for vegetated noise barrier walls, some signage elements, retaining walls, and as foreground to MSE bridge walls to reduce their scale.

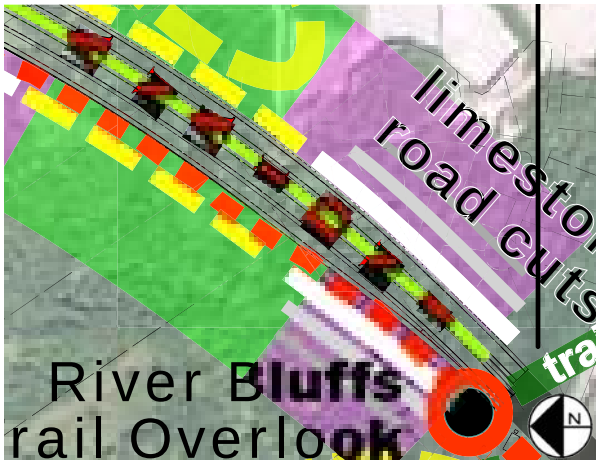
Those structural walls can be either cast in place with combinations of coursed limestone form liners and large scale thematic images, or as specially formed MSE walls similar to those utilized along the I-70 at the Indianapolis Airport. This theme will be integrated with a landscape continuum ranging from crop and vineyard rows to naturalized landscapes of native grasses and wildflowers, depending on spatial constraints.

Design Element: Indiana Welcome Statement

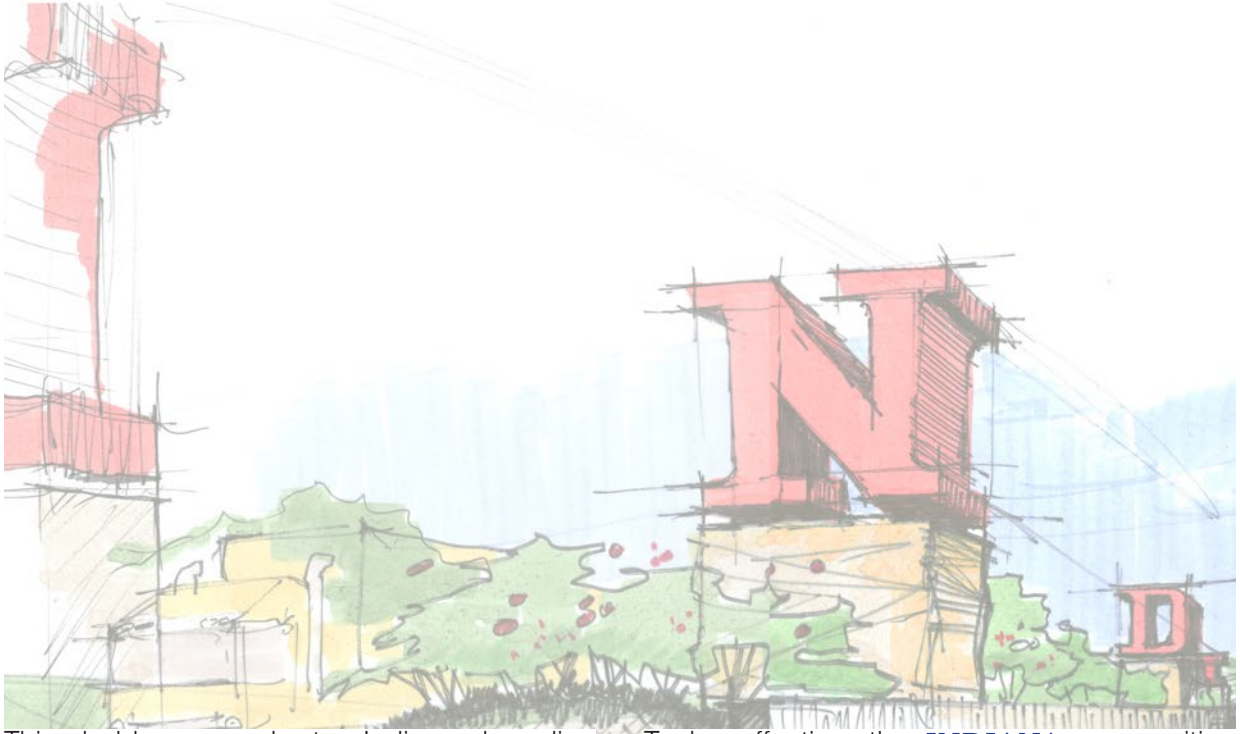


This “Welcome to Indiana” element will consist of monumental block letters that sequentially spell out **INDIANA** to motorists that have crossed over the Ohio River bridge from Kentucky. The letter forms will appear to float above large rock-face limestone quarry blocks set between protective double median barriers that also function as raised landscape beds with ornamental flowering shrubs selected for drought resistance and low maintenance. The letters are illuminated by solar powered LED fixtures or, alternatively, faced with a retro-reflective material. They would ideally be a commissioned work by the internationally esteemed Indiana-born artist, Robert Indiana, famous for a series of letter and numeral based artworks including the iconic “LOVE” series that resides at the Indianapolis Museum of Art. This version could be fabricated by the skilled boat builders of Jeffersonville.

Though facing northbound traffic, the three dimensional letter forms will be clearly understood by southbound motorists as well, signifying departure by their still legible reverse form.



Design Element: Indiana Welcome Statement



This bold approach to Indiana branding and welcoming is intended to *supplant*, not supplement, the standardized welcome signs currently used at other Indiana gateways in a variety of sizes and configurations. Those are not unlike most other states' counterpart signs.

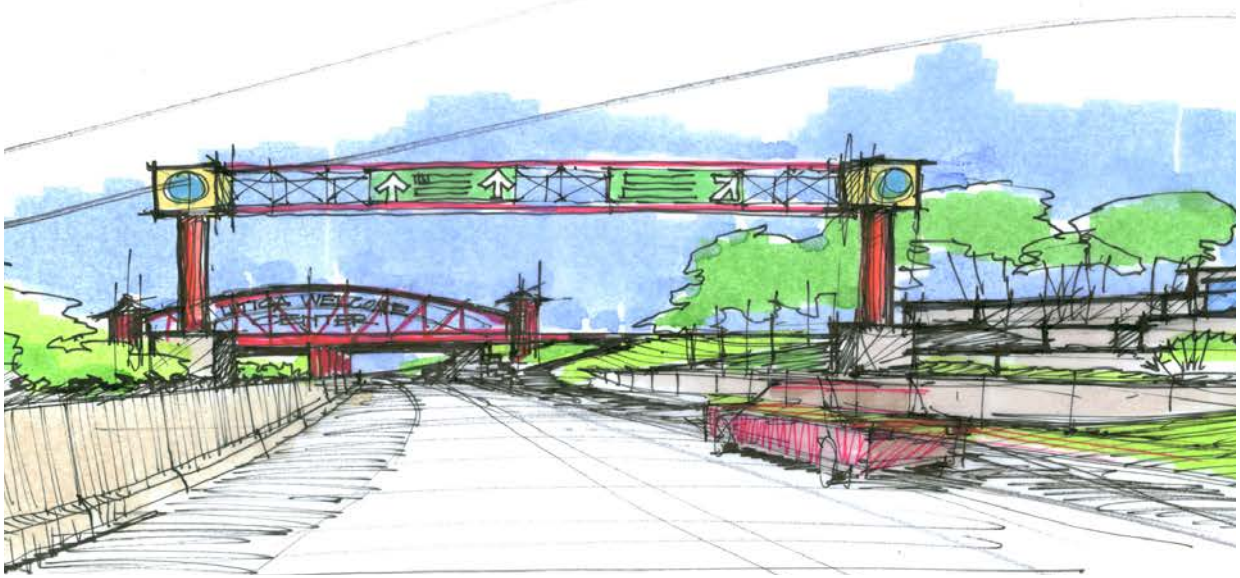
As an art-based composition, this concept implies rather than explicitly and literally states a welcome message. Its massive scale and kinetic unfolding will leave an impression much greater than the conventional approach.

To be effective, the **INDIANA** composition needs to reside in an uncluttered setting that does not compete for attention with the MUTCD mandated location of highway Guide Signs. Locational coordination of these elements as well as an optimum spacing related to highway speed is therefore important. Too closely spaced, they will be distracting and irritating, almost stroboscopic in certain light; too far apart and their sequential readability will be diminished. Like any piece of art, presentation is important, as is long time conservancy. (see Section 4 re Partnerships).

Robert Indiana at the "LOVE" fabrication shop, 1970
Photograph: Tom Rummler: Collection of IMA.

An example of the standard Indiana Welcome sign

Design Element: Sign and Bridge Structures



Corridor-specific overhead bridge and/or cantilever sign structures with base protection

Example of similar interstate sign structure support

Typical roadway appurtenances can contribute to the special character of this corridor by relatively modest refinements of standard details. Overhead or cantilever signage is visualized here with special vertical support towers and capitals. The adjacent image is a similar application on another interstate corridor.

The sign base's protection is indicated as an extension of the Ohio River bridge's double median barrier to and beyond the Old Salem Road bridge's center piers. It has a raised median planting of hardy flowering shrubs selected for adaptability to the harsh conditions of the median.

The Old Salem Road bridge beyond is indicated with a safety fence associated with the proposed multi-use trail linkage between east and west service center development. The fence structure is proposed to be the basis for a highly visible graphic announcing the first/last Indiana service and welcome center's location. It will be of a sufficient scale to inform motorists well in advance of the decision point for exiting the highway. Its visual prominence will reinforce the repeat travelers' mental map of this location.

Interchange Area Opportunity

This exit is an important access point for both Utica and the *River Ridge Commerce Center*, meriting special attention to how it is developed.

Opportunities to collaborate with Jeffersonville and Clark County on how this exit can be planned to perform as a virtual welcome center and rest area, with a full array of traveler services, are discussed in greater detail in the *Public Private Partnerships* and *Next Steps* sections of this report.

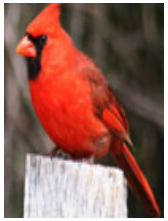
Design Element: Bridge Elements/Indiana Icons

Bridge end iconic Indiana image opportunity

Iconic images

Large scale sculptural depictions of Indiana associated images such as “corn”, the state bird “Cardinal”, or historic elements can take various forms:

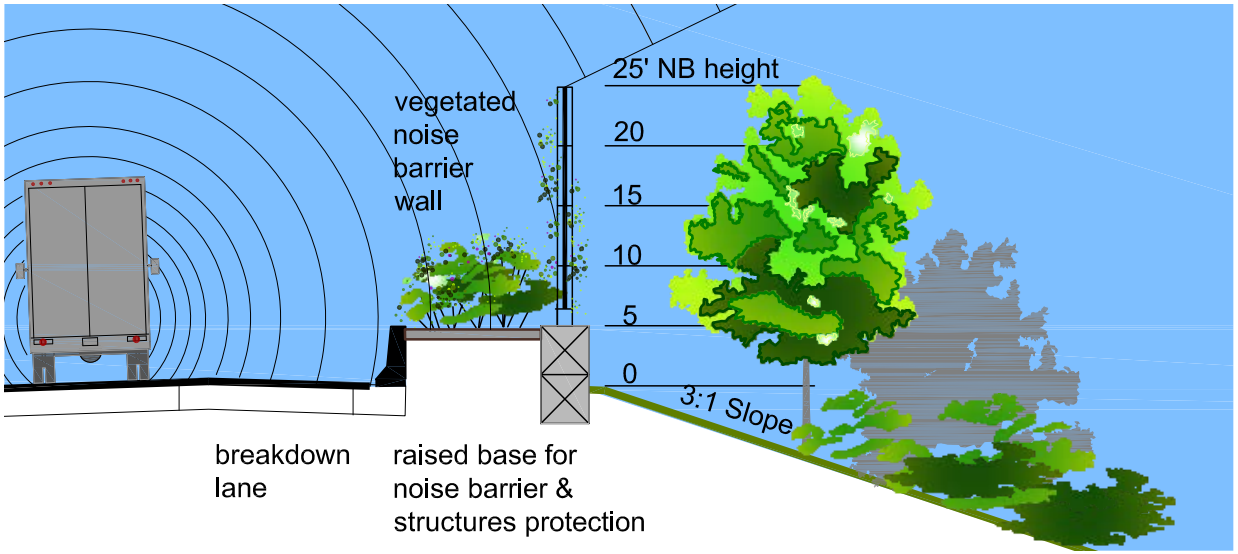
- Bridge end 3-dimensional abstraction
- Wall structure bas relief panels
- Free standing element mounted on the typical limestone block plinths similar to those proposed for the **INDIANA** letters in the median



Examples are shown here and could include:

- Traditional barn or silo form
- Historic farm implement
- Riverboat
- Crop forms as abstraction

Design Element: Noise Barriers



Noise barrier wall at constrained fill section. Median Barrier/raised planting base and vegetative cover

Typical obtrusive noise barrier and guardrail

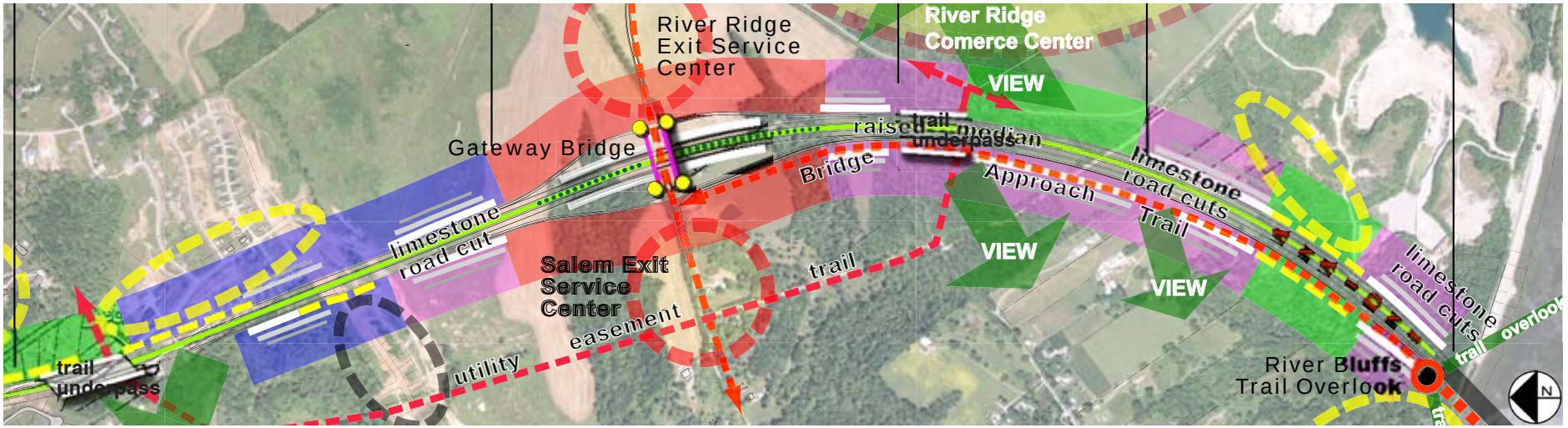
Noise barriers are a project impact mitigation feature intended to reduce highway noise perceptible at adjoining residential land uses to an acceptable level. They are also a highly visible element, creating a tunnel effect for the roadway and a potentially obtrusive enclosure for the adjoining districts. Preliminary studies have established generalized noise barrier wall locations relative to existing or platted residential land uses . They will be further refined to more precisely define locations and heights based on corridor terrain and distance. 20-25' heights are expected.

Typical CSS designs mitigate the visual impact of these conspicuous elements by addition of surface patterns ranging from abstract to stone or brick patterns, embedded symbolic representations, or coloration.

This study recommends another strategy to reduce the scale and conspicuity of noise barriers for this corridor:

- Reduce the apparent height by creating a base of limestone blocks, when beyond the clear zone, or as a concrete median barrier when protection is required, and establish a raised planting bed between the base and the wall.
- Make the remainder wall a green wall with vine plantings either directly on the wall surface or as a twining vine on a grid held off the wall surface. The grid spacing and material would relate to the stylized agricultural fence used along corridor edges.
- Color the base material an earth tone.
- Stagger the wall plane alignment with returns, vary the height of each adjacent plans, and step the ends down to grade. Soften ends with tree plantings.
- Treat both highway side and land side similarly to mitigate visual scale for both.
- Anticipate future residential development needs for acoustic treatment by building the vegetated base at most fill areas, with the added benefit that it alone will provide a degree of noise mitigation.

Design Element: Trail and Community Links



Local and regional connectivity links

The multi-use trail proposed to parallel the new highway will connect, via the East End Bridge, with the developing Louisville Loop trail system. It can potentially become the basis for a counterpart loop within Clark County and beyond to the Ohio River Greenway to New Albany, thus promoting regional tourism.

Locally it can be the backbone of a system that breaks down the barrier effect of the highway corridor, making it cross-permeable to the adjacent growing communities such that they enjoy a higher level of connectivity than now exists. It would also provide multi-modal access from those communities to River Ridge Commerce Center, a growing major employer.

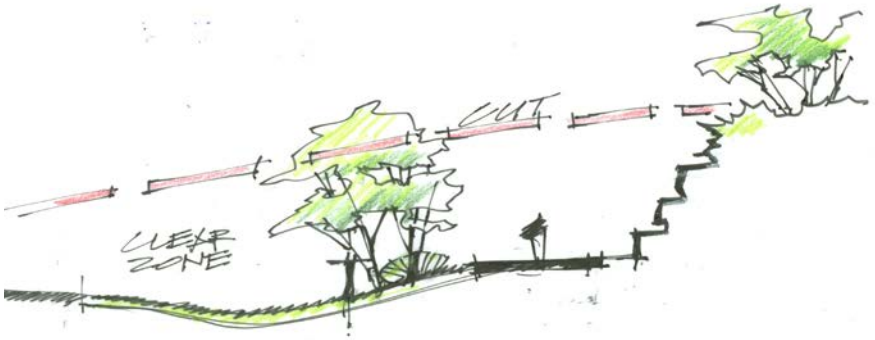
Such a system would thus provide not only commuting choice but also further strengthen tourism and recreation functions.

Key features include provision of a bicycle-pedestrian facility on the Old Salem Road bridge such that the probable service/ hospitality centers likely to develop at the northbound and southbound exits would be linked as would be the communities beyond. Other bridges should be planned for multi-modal access as well since all indicators show that demand for local trail networks will require such facilities as the area develops.

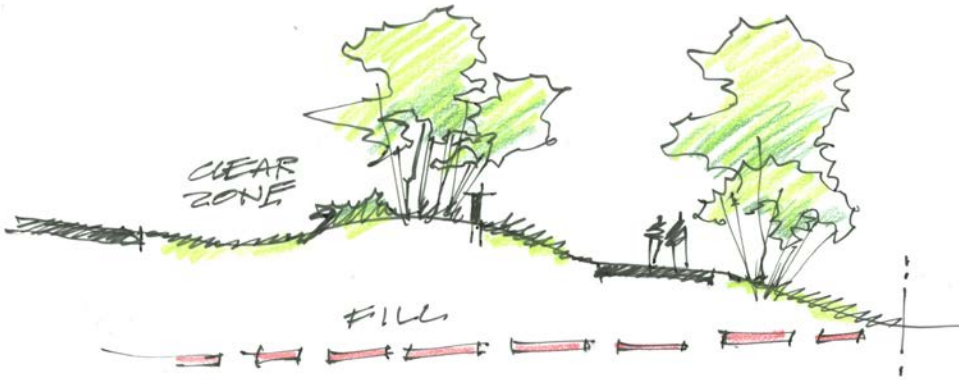
A potential extension of the system that avoids Salem Road exit area traffic exists along a north-south utility easement parallel to and west of the corridor. A trail there could also utilize two planned corridor underpasses thus further erasing the corridor's barrier effect.

Design considerations for the corridor trail include: shifting the alignment away from the highway past clear zones where possible to eliminate barrier rails and to allow landscape enhancements and spatial buffering; provision for trail passage through the complicated interchange area by grade separation culverts, made cost effective when associated with the extensive earthworks that will occur there (the Columbus SR 46/I-65 exit tunnels are a model). Another trail feature would be to integrate it into the shaping of the limestone road cuts, giving the trail additional interest and visibility.

Design Element: Trail and Community Links



Trail at a limestone cut condition, beyond the clear zone



Trail at fill condition, beyond the clear zone and benched into slope

Trail design as experience and expression

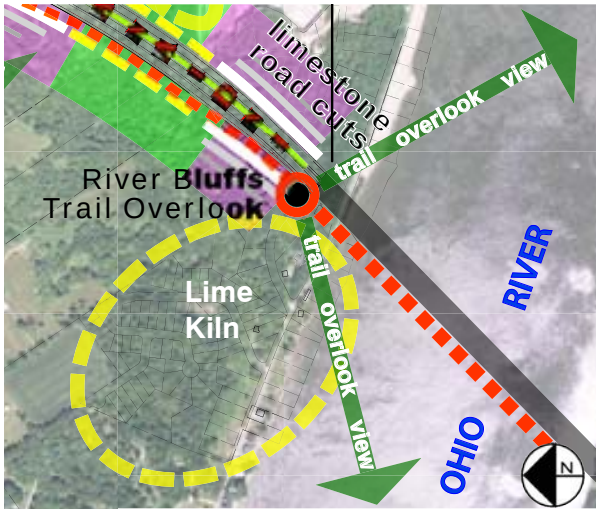
The multi-use trail will be a highly visible element for much of its route along the south bound lanes between Old Salem Road and the Ohio River bridge. It is an opportunity to not only create an important bi-state recreational facility, but also to express the integration of multi modality into major transportation investments to travelers entering and leaving the state. It says "Wow, Indiana is a cool place that values these things".

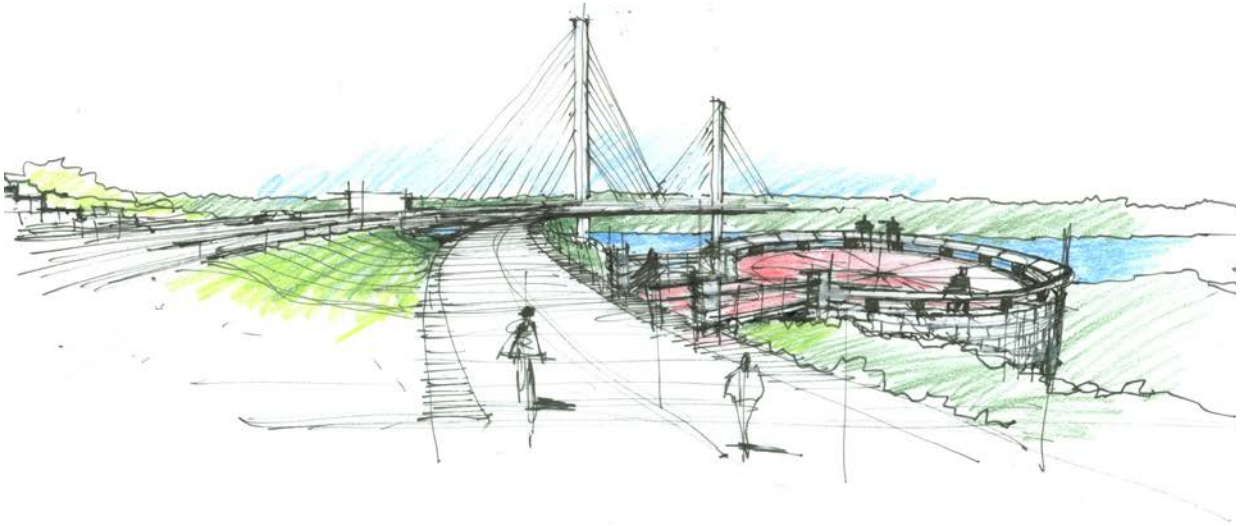
Rather than simply fitting the trail alignment to conventional highway terrain modeling, it is proposed that the trail weave through manipulated cut and fill areas, with strategically placed landforms and plantings that alternately expose it to the view from the road or buffer it from the incessant highway noise. The sketches above indicate this conceptually:

- Left: several limestone cut sections can be manipulated to raise the trail to prominence while closely engaging the outcroppings. This can be effective at the initial road cut just north of the bridge landing, where the higher elevation, reached with a reasonable cycling grade of less than 5%, will also give the overlook an up-river view past the bridge.
- Right: roadway fill areas create opportunities to bench the trail down slope (in some cases below a necessary noise barrier) effectively reducing noise impact on users.
- Landscape plantings and mounding, where space exists beyond clear zones, are also effective noise reduction techniques that benefit both trail users and adjacent residential development (existing or future) while relieving trail users of the monotony of strictly adhering to roadway alignments.
- The required barrier fence separating the trail from interstate traffic is proposed to be a stylized agricultural fence as a continuing motif throughout the corridor.

Interpretive and wayfinding signage, pull-off viewing/rest areas, and easy connections to local trails will combine to make the trail a destination in itself, promoting local tourism and its economic development benefit. An interpretive overlook is described on the next page.

Design Element: Trail and Community Links/Overlook Section 3





The historic lime kiln and Bridge stories conveyed on a river viewing overlook high above the Ohio River

An Interpretive destination opportunity

An Ohio River Overlook is proposed for this location immediately south of a road cut through the limestone outcropping of the new bridge's Ohio River bluff landing. The overlook is positioned above the historic lime kilns and would reference them and the limestone industry with interpretive panels. Additional panels would tell the engineering story of the twin tower cable-stayed span, and of the ice-age forces that spawned the river itself.

The overlook itself would grow out of the exposed native limestone of the bluff and transition to a rustic limestone drum as the grade falls away. Its distinction from the modern/minimalist bridge railing elements that would terminate here would be reinforced by setting the drum off from the trail with a short access bridge, heightening the sense of this as an aerie perched high above. the Ohio River Valley below.

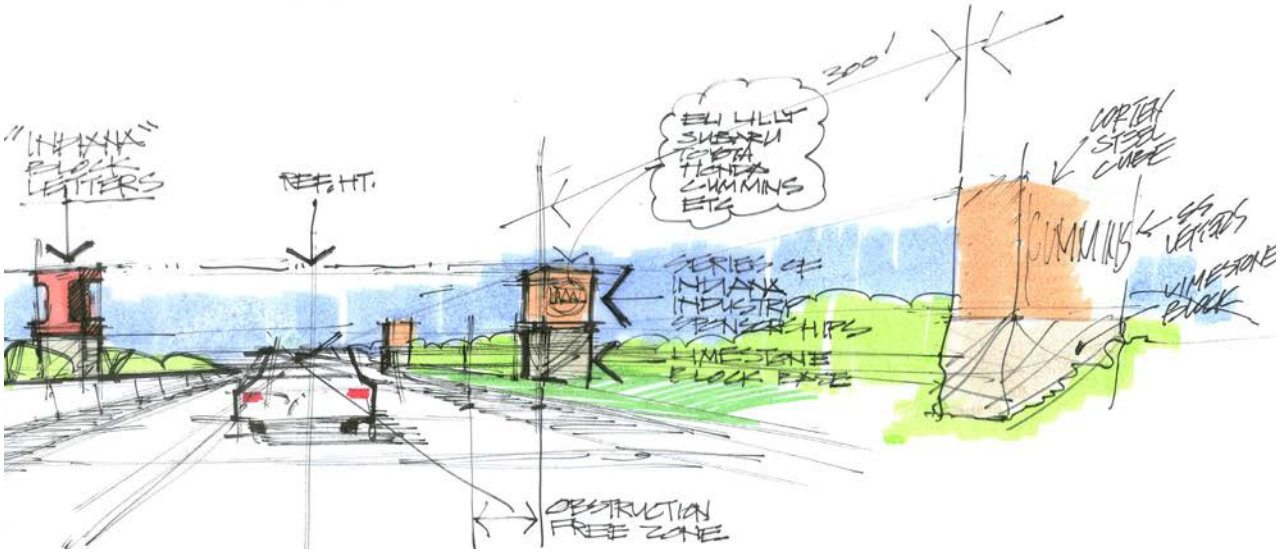
The trail veers away from the highway as it heads north towards Old Salem Road, allowing the bridge railing to transition to a lower right-of-way fence positioned in a *ha-ha* swale between the road and the trail, thereby lessening the visual impact of a barrier rail/ fence combination.

This interpretive station has the potential to become a tourist destination accessed (by foot, bike or personal assistive device) from a visitors center at the Salem Road exit, as well as from the bi-state trail system itself.

The new Ohio River Bridge, an engineering marvel and interpretive destination

Public Private Partnerships

Section 4



The aggregate annual public relations, promotional or community service budget of Indiana-based Fortune 500 companies, trade associations, and Universities is substantial.
The potential benefit to those enterprises of being closely identified with a world-class gateway entry is also substantial.

Strategies for Sustainability

This CSS study envisions the new terrain highway corridor as an important introduction to travelers entering Indiana from the south. It envisions a corridor that expresses Indiana in a positive and memorable way, depicting multiple themes of Industry and Education, Sustainable Energy, Commerce, and Indiana Limestone/ Geology, all within a continuum of the Cultural Landscapes of agriculture, forestry and history. *The Indiana Approach Experience* as a branding opportunity for the State of Indiana.

This section discusses a concept for developing that focused experience in a way that it has a built-in mechanism for its self-funded implementation and for its sustainability over time.

Partnership Concept

Each of the proposed themes has a constituency with significant economic and emotional (self) interest in the telling of its story. Indiana economic interest groups, major corporations and major educational institutions expend much effort and funds towards establishing positive public personae, beyond the advertising of their specific programs and products.

The gateway corridor, as proposed herein, will tell that collective story in a non-specific and abstract way. An opportunity exists for Indiana's defining organizations to identify with, promote, and help underwrite the implementation of that mission while still honoring its "public good" rather than overtly "commercializing" it.

Underwriting Concept

The difference between sponsorship and underwriting is that the former has a commercial expression while the latter has an altruistic "for the common good" sensibility in its expression. An analogy is the non-profit Public Broadcasting System (PBS) which is "underwritten" by major corporations and foundations in a way that does not (for the most part) diminish the authenticity and public resource sense of the funded system itself.

It is in that spirit that this concept is presented as a basis for development and long term sustainability of the Indiana Approach Experience at a very high level of design and maintenance independent of budget driven expediencies.

Public Private Partnerships

Section 4

An overview of the concept
Recruit at least 25-30 major organizations as an honor roll of Indiana organizations. Inspire their investment in:

- a gateway corridor enhancement fund
- a perpetual maintenance endowment
- a responsible authority for corridor management

Create a system for highly visible but dignified underwriter recognition. Envisioned as a counterpart to the monumental INDIANA letters, these 6' metal cubes will have underwriter's names in a distinctive but consistent type font, mounted on 6' cube rock face limestone blocks that continue this established material palette. They are spaced at consistent intervals through the corridor at a clear zone distance from the road edge.

Express as art, not advertising, in a controlled setting. Create State Scenic Byway designation to safeguard the investment and clarity of both the design elements and underwriter recognition elements.

Create Interchange Economic Development TIF Districts and BID/BIZ areas to fund and guide the development, management, promotion and maintenance of those places as thematically consistent welcome centers and destinations in themselves: location for trailheads, information centers, interpretive centers.

Consider corridor management relationships (in addition to funding partnerships):

- Purdue/INDNR/Farm Bureau/Dow Agrosciences collaboration for stewardship and educational research in the management of the *cultural landscapes* theme component
- Purdue/INDOT *Joint Transportation Research Program f*or development and monitoring of the sustainable energy theme component with grant support from DOE, HUD, FHWA
- Local and regional planning and development agencies for innovative development of interchange area traveler services and welcome centers

A partial list of potential partners:

Associations
Indiana Farm Bureau
Central Indiana Corporate Partnership
Bio Crossroads
NCAA
Indiana Limestone Institute

Universities and Colleges
Purdue University
Indiana University
Ball State University
University of Notre Dame
IUPUI
Ivy Tech

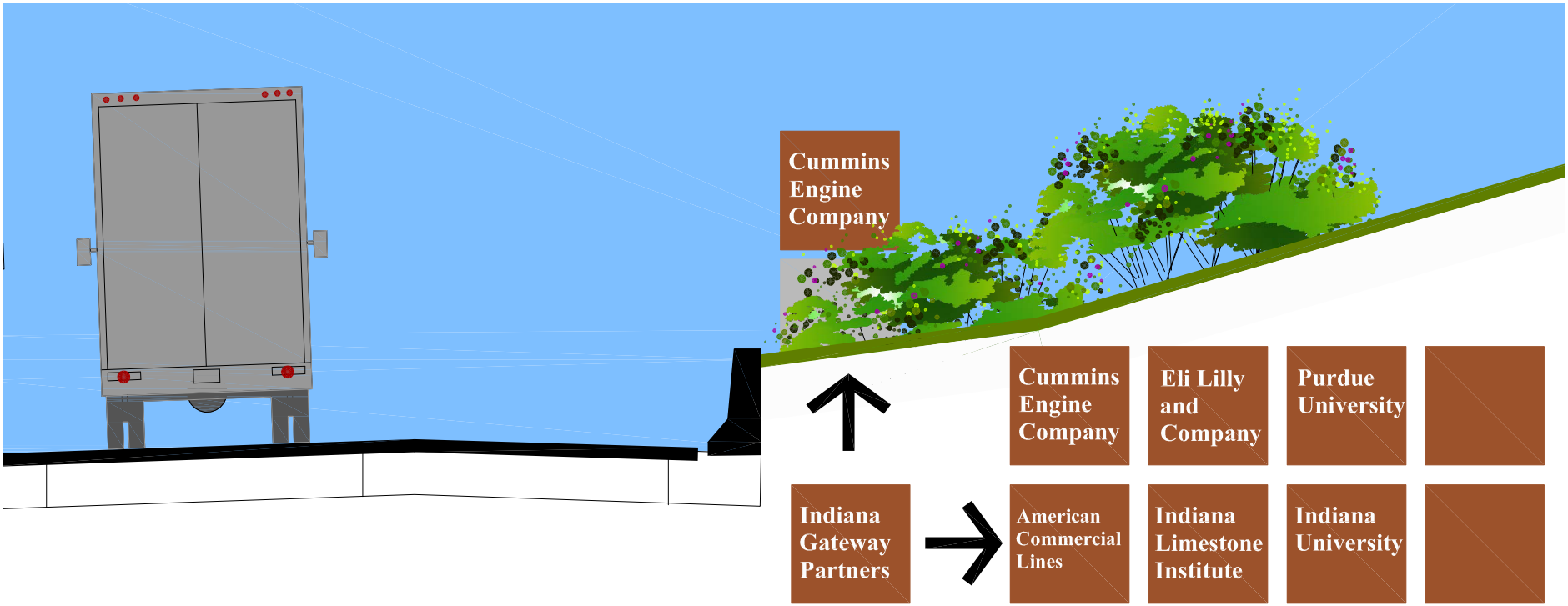
Sports/MotorSports Organizations
NCAA
Indiana Pacers
Indianapolis Colts
Indianapolis 500

Corporations
Indiana headquartered public companies
*National rank and operating revenue in billions**

WellPoint	32	$61.3
Eli Lilly	122	$20.4
Cummins	181	$14.3
Steel Dynamics	318	$ 8.1
Brightpoint	496	$4.7
Dow Agrosciences*		$4.5
Conseco	537	$4.2
Zimmer Holdings	543	$4.1
Simon Property Group	573	$3.8
Berry Plastics	610	$3.5
Calumet Specialty Products	779	$2.5
Vectren	782	$2.5
Biomet	808	$2.4
Hill-Rom Holdings	942	$1.9
KAR Holdings	973	$1.8
American Commercial Lines***		$1.2

National companies with strong Indiana presence
Walmart
Suburu
Honda
Toyota
Ford
General Motors

** operating revenue is an indicator of scale, not net income or profitability*
*** an indiana based subsidiary of Dow Chemical*
**** Jeffersonville-based*



Partnership Acknowledgements

The Indiana Approach Experience is a thematically coherent linear park/parkway proposed to be underwritten by Indiana-based organizations that in turn benefit by their association with this gateway. Recognition of their sizeable investment is proposed to be in the form of regularly spaced monoliths of oxidized steel with raised stainless steel letters.

Each metal block will appear to float over a rock face quarry block of Indiana limestone, set beyond a protective median barrier. Where clear zone requirements can be met without barrier rail protection, such as on a back slope or road cut, and still be within a reasonable and readable distance from travel lanes, they would integrate with natural or constructed limestone block edges discussed earlier.

Presentation of sponsors/underwriters would be based on renewable 10-year contract dedicated to corridor enhancement with an increment for a perpetual maintenance endowment.

Once the underwriting concept is vetted by the design/management team, approaches would be made to entities such as *Indiana Economic Development Corporation*, *One Southern Indiana,* and *Central Indiana Corporate Partnership* to gauge interest. Development of the concept would occur within an organizational framework of a public authority associated with Departments of Transportation and/or Commerce, and entrusted with long term corridor management. It could serve as a model for other interstate gateways to Indiana.

Summary and Next Steps

Delineation of scope of CSS elements this study has proposed, at a non-cost constrained level, a multi-themed treatment of the overall corridor, and a series of specific design elements that address the treatment of various highway elements, an associated trail, and interchange areas. Additionally the study has proposed an innovative partnership concept for the funding and long term maintenance of these enhancements.

After review, comment, and vetting of these sketch concepts by the project management team, multiple steps need to be undertaken to define a final scope of CSS elements and to then carry those elements through to final bid documents.

Those include cost/benefit justification, transportation engineering reconciliation, constructability, design development, stakeholder review and input, final design, and construction document preparation.

These next steps in the CSS process are outlined in the table on this page as a broad brush overview, i.e., each stage has multiple subset submissions per INDOT/FHWA project development parameters. A parallel activity will be the establishment of a corridor management plan that outlines the innovative Public Private Partnership for funding and long term management of the non-highway elements proposed here.

CSS Component	Preliminary Design	Stakeholder-Pub Review/approval	Final Design & Engineering	Construction Documents
Themes Cultural Landscapes Industry and Education Sustainable Energy Industry and Commerce Geology and Limestone	Conceptual design of themes Agency review of conceptual design; establish scope and budget	Agency review of preliminary design and approval for public and stakeholder review		
Design Elements Limestone Palette Landscape Palette Welcome Statement & median barrier definition CSS treatment of sign and bridge structures Noise barriers Bridge turbines/solar arrays Trail/ and community links Trail overlook	Preliminary design of CSS elements CSS element grading/drainage Traffic engineering reconciliation of road elements Locate & design noise barriers Preliminary trail alignment Draft Interpretive elements content Lighting design alternatives	Public Meeting presentation of schematic design level plans, visualizations, drive through simulations; Receive public comments, refine plans as required. Proceed to final design stage after FHWA concurrence with findings	Final design & structural design of roadway elements Final trail horizontal and vertical alignment Trail Overlook site development Trail Overlook interpretive graphics content Final planting plans	Prepare and submit final tracings and engineers estimate after requisite submission stages
Public-private Partnerships Governance model Guidelines Prospectus	Develop Corridor Management Plan and model for participation	Final development and management plans for CSS corridor elements	Launch campaign	Execute Commitments & MOU's/ MOA's

Visual Simulation of the Indiana Approach Experience

An animated drive-though of the corridor has been developed beginning at the Ohio River Bridge landing in Indiana (shown above) and continuing through the Old Salem Road Bridge interchange area. It illustrates some of the concepts developed in this study, particularly the welcoming INDIANA letters sequence in the raised median, an extension of the bridge median. The drive-through is illustrative of the evaluative presentation technique that will be developed in greater detail for the entire corridor in the next stage of CSS development, for agency review and public presentation. This visualization technique will be particularly useful in discussions with prospective partners for funding and managing Indiana gateway corridor enhancements.

Highway Safety Standards Conformance
The right-of-way edge and median enhancements must conform to safety standards.

Median objects
The median barriers that separate the parallel bridge spans will carry over onto the landside median then gradually flare outward. The extension of the concrete median barriers will allow placement of the welcome INDIANA letters, but will also provide protection for various sign support elements as well as the center piers for the Old Salem Road Bridge. They will thus replace the various guard rail and cable barriers that would occur between the two bridges. The proposed median barrier system does eliminate periodic reconstruction of compromised guardrails and cable barriers.

Concrete median barriers are considered a less forgiving obstruction than the former types, but it is anticipated that this section of highway would be a reduced speed (55 mph) thus lessening that hazard differential, as well as providing a uniform cross section, reducing cross-median distractions, and eliminating headlight glare issues: a net safety gain.

Median raised landscape maintenance
Examples of successful interstate raised landscape medians can be found in Louisville and Asheville, and lessons learned there are transferable to ensure a sustainable system.

Clear zone issues
Many of the proposed edge objects would occur within clear zones and thus would require either guard rails or, preferably, median barriers with raised planting.

Fill areas that in many cases will require noise barrier walls are an example.

It is intended that those wall protection barriers be extended towards the alternating cut area conditions where they would flare into the back slope beyond the clear zone.

Likewise bridge barrier rails would ideally be extended as concrete median-type barriers, eliminating the need for end protection.

An added benefit to the general use of concrete median barriers is that a uniform driving environment is achieved, and that virtually all landscape materials can be naturalized, eliminating the high maintenance regimen and its accompanying safety issues associated with clear zone turf areas.

Trail issues
This study recommends that the trail swing away from near-roadway proximity immediately after the Ohio River Bridge crossing to improve the trail experience while reducing extents of the combined guard rail and tall safety fence. That can easily occur in the rock cut area, and can be accommodated in the fill area beyond by benching the trail on the slope area. Space to achieve benching can be gained by barrier rail reduction of clear zone, and by steeper slopes above the trail, planted with non-turf, slope stabilizing plant material. That planting can reduce some noise issues for nopth the trail and adjacent residential areas, existing or planned.

Note: *there could be additional benefit gained by extending the bridges' narrower median through much of the corridor: lessened slopes in fill areas, reduced bridge spans, space for vegetative noise attenuation through dense evergreen plantings. That benefit must be weighed against engineering costs associated with adjusting one or more alignments.*

Lighting
Lighting in the interchange is proposed to be low-level poles at close spacing rather than high mast wide area lighting for several reasons:

- Reduced *dark sky* impact
- Economies now possible through recent advances in both solar and LED technologies.
- The concept of edge lighting of drive paths rather than uniform wide area lighting provides enhanced guidance to motorists, reducing the differential between illuminated and non-illuminated roadway sections.

Detailed study of interchange lighting will occur in the next phase of CSS development.