

Project Report

Kentucky Transportation Cabinet, District 6, Covington, KY

Newsletter No. 3 – October, 2007

PROJECT RECAP

Conceptual Alternatives Reviewed and Evaluated

Two meetings were held in August to allow Public Involvement participants to review, evaluate, and comment on a series of Interchange Modification conceptual alternative designs. The review and comments were intended to help Project Team designers to assess designs in order to identify 4 conceptual alternatives to carry forward for complete engineering, traffic, and environmental investigations.

On August 2nd, 2007, the Interchange Advisory Committee (IAC) and the Section 106 Review Consulting Parties met at the Newport High School to review and discuss design preferences. The Committee members and Consulting Parties also filled out questionnaires to help the Design Team evaluate the suitability of design issues.

On August 9th, 2007, the general Public was invited to attend a Conceptual Alternatives Evaluation meeting at Newport High School. Over 220 persons from Newport, Bellevue, and other areas attended the meeting. The public were asked to review, comment, and answer questions on most of the same designs that the IAC and S106CPs evaluated at the earlier meeting.

To provide the public with an extended review period, the Conceptual Alternative Design exhibits were displayed at the Campbell County Library, Newport Branch on 6th Street from Friday August 10th to Friday August 17th. The exhibit included Comment Cards and Questionnaires like the public meeting.

Results of the evaluations received at the two meeting are posted to the Project web-site www.471project.org under the pull down menu Public Information, Meeting Notes.

The folder named *08-02-07 Interchange Advisory Committee/Section 106 Review Consulting Parties Meeting Materials* contains:

- The August 2nd IAC/S106CPs Conceptual Alternatives Evaluation **Meeting Minutes**
- The IAC/S106CPs Conceptual Alternatives Evaluation Meeting log of **Comment Cards** received.
- The IAC/S106CPs Conceptual Alternatives Evaluation Meeting log of **Questionnaire Results**.

The folder named *08-09-07 Conceptual Alternatives Evaluation Public Meeting* contains:

- The August 9th, 2007 Conceptual Alternatives Evaluation Public Meeting log of **Comment Cards** received.
- The Conceptual Alternatives Evaluation Public Meeting log of **Questionnaire Results**.

These documents can also be viewed at the Kentucky Transportation Cabinet District 6 offices, 421 Buttermilk Pike, Covington, KY by appointment during regular business hours.

Alternative Design Evaluation Materials on Project Web-Site

The background materials discussed above regarding Conceptual Alternative designs, IAC and S106CPs and Public opinions, and Design Team considerations appear on the Project web-site www.471project.org.

The materials include mapping graphics of proposed and selected Alternatives, meeting notes and results of opinion polling and design comments, plus updated conceptual designs developed as a result of on-going evaluations.

Materials are generally listed under the Meeting Dates in the Public Information pull-down menu. The folders are named for the 8-02-07 IAC/S106 Consulting Parties Meeting Materials, 8-09-07 Conceptual Alternatives Evaluation Public Meeting, and the 9-19-07 IAC/S106CPs Roundtable Discussions. Any Questions? – please use the site to e-mail us.

Designs Selected to Move Forward

Advisory Committee, Consulting Parties and the Public Consider Designs

Conceptual Alternatives evaluations are continuing in order that the Design Team can identify four viable solutions to carry forward to the Environmental Assessment required by the Federal Highway Administration. The Environmental Assessment documents all of the results indicating the Alternatives' potential effects on the human and natural environments where the Project is taking place. In-depth engineering analysis, including roadway designs and traffic movement modeling for the designs, are also included in the Assessment.

Concepts Eliminated from Further Consideration

On September 10th, 2007, the Design Team held a meeting to discuss results of the August 2nd Interchange Advisory Committee (IAC) and Section 106 Review Consulting Parties (S106CPs) Conceptual Alternatives Evaluation meeting and the August 9th Conceptual Alternatives Evaluation Public Meeting.

The Design Team's evaluation began with a review of the comments received about the Conceptual Alternatives and the results of the Questionnaire polling. The Comments and Questionnaire results are important contributing factors to the design and revisions of alternatives.

For example, the comments and questionnaire results, along with traffic modeling results, helped the Design Team identify a number of the original 13 Conceptual Alternative designs to eliminate from further consideration. The original Conceptual Alternatives were:

1, 1a, 1b, 2, 2a, 3, 3a, 4, 4a, 5, 5a, 5b, and 6

(please refer to the web-site 471project.org for graphics of these designs).

The Concepts eliminated resulted from failures to meet engineering functional capability or from negative community opinion. The following list describes the reasoning behind the eliminations. These major reasons for elimination are included under each of the conceptual Alternates eliminated from further consideration.

Failures in Engineering and Functional Capabilities

1. Terminating ramps at a major roundabout at Riviera Dr./Donnermeyer Dr./6th St. favors access to South Bellevue, Ft. Thomas and Newport via 6th St. This concept *drastically* changes local and interchange traffic patterns.
2. Traffic destined for north Bellevue and Dayton will not use the roundabout and will take the ramp to Park Ave. and KY 8. The Park Ave. ramp must remain open.
3. The Benefit of relocating Riviera Dr. to the northbound ramps intersection is negligible.
4. Traffic weaving is a concern in the southbound lanes of the Daniel Carter Beard Bridge and may be worsened by the shortening of available distance. This is a direct result moving the I-471 southbound exit terminal north several hundred feet to allow the exit split near Providence Way.
5. A dual-lane exit terminal at this location will not function with the recommended fourth lane extension to Memorial Pkwy. A dual-lane exit off of a four-lane highway requires five lanes upstream for approximately 1,500' and this is not possible due to the steel arches constructed on the Beard Bridge.
6. Poor traffic level of service at the northbound ramp intersection with KY 8 due to heavy traffic volumes converging at a single intersection.

Negative Community Opinions

1. Opposition to commercial center impacts at the corner of Donnermeyer Dr. and Riviera Dr.
2. Opposition to negative impacts to the Newport Island (East of I-471).
3. Additional traffic on 6th St. is intrusive to historic district.
4. Opposition to impacts to a community recreational area, the "Bellevue Vets Ball fields."
5. Increased vehicular traffic on Park Ave. and 6th St. combined with heavy pedestrian traffic negatively impacts residential historic districts, Newport High School, and residential areas near 6th St. and Oak St.
6. Dual southbound ramp lanes running parallel to Providence Way result in undesirable impacts to the Historic District.

The conceptual Alternates selected for elimination include 5b, 6, 3a, 2a, 5a, 4 and 2 and are listed below in order beginning with most opposing votes:

Designs Selected to Move Forward (continued)

Concept No. 5b: Maintains existing southbound exit ramp with an additional slip connection past Providence Way to a roundabout at Riviera Dr./Donnermeyer Dr./6th St. Relocates northbound on-ramp at the roundabout and relocates the northbound off-ramp to Linden Ave. Reroutes Riviera Dr. to former northbound ramp intersection at KY-8.

Failures in Engineering and Functional Capability:

1 – 2 – 3 – 4

Negative Community Opinions:

1 – 2 – 3

Concept No. 6: Maintains the existing southbound exit-ramp with an additional slip connection past Providence Way to a roundabout at Riviera Dr./Donnermeyer Dr./6th Street.

Failures in Engineering and Functional Capability:

1 – 2 – 3

Negative Community Opinions:

1 – 3

Concept No. 3a: Relocates the I-471 southbound off-ramp connection to Riviera Dr. and reroutes Riviera Dr. to Patchen Ave. through the Bellevue Vets ball fields.

Failures in Engineering and Functional Capability:

3

Negative Community Opinions:

4

Concept 3a was modified to eliminate the swag through Vets and carried forward as Alternative 3b.

Concept No. 2a: Relocates the I-471 southbound off-ramp connection to Riviera Dr. and to the northbound ramps intersection with KY 8. Reroutes Riviera Dr. to Patchen Ave. through the Bellevue Vets ball fields.

Failures in Engineering and Functional Capability:

3 – 5

Negative Community Opinions:

4

Concept 2a was modified to eliminate the swag through Vets and carried forward as Alternative 2b.

Concept No. 5a: Maintains the existing southbound exit-ramp to Park Ave. with an additional slip connection past Providence Way to a roundabout at Riviera Dr./Donnermeyer Dr./6th St. Relocates the northbound on-ramp entry point to roundabout. The northbound exit-ramp terminates at Linden Ave.

Failures in Engineering and Functional Capability:

1 – 2 – 4

Negative Community Opinions:

1 – 2 – 3

Concept No. 4: Maintains the southbound ramp to Park Ave. with an additional connection to 6th St. and to the northbound ramp intersection with KY 8.

Failures in Engineering and Functional Capability:

4 – 6

Negative Community Opinions:

3 – 5

Concept No. 2: Relocates the southbound ramp connection to Riviera Dr. and to the northbound ramps intersection.

Failures in Engineering and Functional Capability:

5

Negative Community Opinions:

6

Concept 2 was modified to a single-lane southbound exit terminal and carried forward as Alternative 2b.

The Conceptual Alternatives **remaining** at this point for further consideration included, 1 (considered a KY 8 baseline improvement common to all designs), 1a, 1b, 3, 4a, and 5.

Concepts Revised/Developed for Further Consideration

The Interchange Advisory Committee and the Section 106 Review Consulting Parties met on Wednesday, September 19th to consider the results of the Public Meeting in regard to the Conceptual Alternatives and to view revisions to the remaining designs.

The results of this meeting were to affirm the Alternatives eliminated (2, 2a, 3a, 4, 5a, 5b, 6) and the reasoning behind their elimination. The Committee and Consulting Party members also reviewed Conceptual Alternatives retained – 1, 1a, 1b, 3, 4a, and 5 – as well as three revised designs – 2b, 3b, and 5d described below.

Alternate 2b is a revision of Alternate 2 except with a single-lane exit and extra turn lanes at the Riviera Dr. ramp terminus. The single-lane exit was especially important to recognize because of weave distance problems with a dual-lane exit. A dual-lane exit off of a 4 lane highway requires 5 lanes upstream for approximately 1,500' and this is not possible due to the steel arches on the Beard Bridge. Existing data indicate high accident rates with types of accidents that reflect an already poor weaving condition. The Project Team does not want to make it worse.

Likewise **Alternate 3b**, a revision of Alternate 3, was developed to include only a single-lane exit ramp with the Park Ave. exit-ramp closed. All traffic would be routed to a new intersection created on Riviera Dr.

Designs Selected to Move Forward (continued)

Alternate 5d was a revision of Alternates 5, 5a, and 5b in that the single lane exit ramp was split with one leg terminating at Riviera Dr. but with the second lane looping back to intersect KY 8 just to the west of Linden Ave. Linden Ave. would be closed and access to Newport Island would be located through a new intersection at Beech St. The advantage to this design is that the 471 southbound entrance ramp and exit ramp would be located close enough together that they could be controlled as a single intersection known as a single point urban interchange (SPUI). Preliminary traffic modeling with this design indicated that the intersection could operate at a Level of Service C in the year 2030. Levels of Service C are very efficient in urban setting where many streets and intersections normally operate at Levels of Service D. The split exit-ramp would route Newport (westbound) traffic to the new SPUI and route Bellevue (eastbound) traffic to Riviera Dr. The design of Alternate 5d would also minimally effect the Bellevue commercial district located at Riviera Dr. and Donnermeyer Dr.

Alternative Designs Selected by the Interchange Advisory Committee and the Section 106 Review Consulting Parties to Move Forward

At this point in the meeting, the Conceptual Alternatives left under consideration were 1, 1a, 1b, 2b, 3, 3b, 4a, 5, and 5d. Through further review and discussion, the Design Team, the IAC and S106CPs decided that it was appropriate to further eliminate designs that could not meet engineering functionality resulting from geometric analysis and traffic modeling.

Since **Alternate 1** represents baseline improvements on KY 8 common to all Alternate designs, it remains as a viable alternate and will be retained by decision of the Design Team, the IAC, and S106CPs.

Alternate 1a is Alternate 1 with a connector from Memorial Pkwy. running parallel along the RR tracks to connect to Berry Ave. at Anspaugh Ave. in south Bellevue. Alternate 1a was eliminated by consensus opinion of the Group. The reasoning was that it would:

- Require residential demolitions
- Inappropriately introduce large numbers of vehicles into a residential area not designed for such activity
- Worsen congestion problems currently experienced in those areas.

Alternate 1B was eliminated because it included a two-lane exit ramp which, as explained above, could not meet safe weaving distance standards on the Beard Bridge.

Alternate 2b includes a single lane exit ramp, closes Park Ave. ramp, and splits the ramp, taking traffic to 471 NB exit for Newport and to Bellevue via Riviera Dr. The Alternate 2b design meets preliminary engineering and traffic functionality. By a show of hands, the group voted to carry Alternate 2b forward by majority consensus.

Alternate 3 included a split ramp carrying traffic to Park and parallel to Providence with a shortened weave distance to the bridge. This alternate would require adding piers to the bridge which is expensive. While this concept was voted #3 in the public meeting, the impact of additional traffic on a historical neighborhood (on Park Ave.), the expense of work to be done to the bridge and unsafe weave distance compromises the feasibility of this alternate. By a show of hands, the group voted to eliminate Alternate 3 by majority consensus.

The **Alternate 3b** variation of #3 eliminates the exit ramp split by closing the Park Ave. ramp but does not increase the weave distance and all traffic is carried to Riviera Dr. Discussion of Riviera Dr. and carrying all traffic there took place. This would route greater numbers of vehicles to the intersection of Riviera Dr. with KY 8, subjecting it to greater congestion.

A committee member stated that she believed everyone there had a general consensus that Park should be closed and any concept that closes Park and has two exits should be the only concepts carried forward. The Design Team noted that 46% of the public expressed at the public meeting in August that they do not want to close Park.

The Design Team explained that Alternate 5d could address concerns of closing the Park Ave. ramp with the exit ramp and SPUI interchange. See discussion of Alternate 5d below.

By a show of hands, the group voted to eliminate Alternate 3b by majority consensus.

Alternate 4a routes all southbound exit traffic to the northbound exit ramp and to the ramp intersection with KY 8. The overall Level of Service for the intersection would be F due to a number of factors, principally design year 2030 traffic volumes on I-471 and KY 8. By a show of hands, the group voted to eliminate Alternate 4a by majority consensus (13 for elimination, 5 for carrying forward).

Alternate 5 includes rerouting the northbound exit ramps to Linden Ave. and retaining the Park Ave. exit ramp.

Designs Selected to Move Forward (continued)

By a show of hands, the group voted to eliminate Alternate 5 by majority consensus (13 for elimination, 5 for carrying forward).

Alternate 5d includes closing the ramp to Park Ave., combining southbound exit and entrance intersections and splitting the exit-ramp with a leg to Bellevue via Riviera Dr. The Newport bound traffic goes to KY 8 intersection near Linden Ave. at a single point urban intersection (SPUI). The SPUI would have one signal for both ramps. Traffic westbound to Newport and the Levee would not be adversely effected since the SPUI intersection would only be approximately 500 feet east of its current location at Park Ave. The group agreed to carry Alternate 5d forward for further consideration.

Roundabout Discussions

A committee member commented that while roundabouts were discussed in the first meeting as being safe, viable and attractive designs for intersections, why are all of the concepts including roundabouts being eliminated? The Design Team response was that it was a design detail that can be incorporated after the concept is decided upon and is based on traffic analysis to see if a roundabout is feasible. After full traffic modeling is performed on all Alternates carried forward for further consideration, roundabouts can be considered as a design detail. Roundabouts are effective, they are just not being shown because they are not concepts.

Results of the IAC/S106CPs and Design Team Review

The results of the Roundtable Discussions include consensus agreement to carry Alternate 1, Alternate 2b, and Alternate 5d forward for further consideration. However, the Design Team explained that there are other Alternate variations that must also be included in the full traffic modeling. This involves modeling each Alternate design with a fourth lane on I-471 that is expected to be recommended by results from the I-471 Corridor Design Study (see www.471study.org). It will be important that the two Projects work together to the full benefit of all proposed improvements.

The Design Team will conduct traffic modeling runs for the following conditions and concepts:

- **No-Build** – a No-Build alternate – where no improvements are made – is required so that future traffic volumes can be assessed on the existing facility. This becomes a baseline comparison for all other Alternate designs. (A No-Build alternate is a requirement of the Federal Highway Administration for this type of traffic study.)
- **No-Build + fourth lane** potentially proposed by the I-471 Corridor Design Study.

Both a continuous fourth lane and a fourth auxiliary lane (an on- or off-ramp lane running only between interchanges) will be modeled to determine which performs better.

The outcome of the no-build condition will be compared to the three build scenarios.

(1) **Alternative 1 + fourth lane** (2) **Alternative 2b + fourth lane** (3) **Alternative 5d + fourth lane**

These investigations are expected to take two to three months with a target date for the next round of Committee and Public Meeting before the end of the year.

If the remaining Conceptual Alternatives cannot meet full engineering and traffic-movement functionality, the Design Team retains the right to introduce modifications or new designs. These actions would be to formulate design solutions to address functional deficiencies in the Alternates.

Next Steps

The next step for the Design Team will be to post the Roundtable Discussion meeting notes and exhibits to the web-site. Look under Public Information for a folder containing materials for the September 19th meeting.

Other Steps to be performed in the next few months include: updating traffic counts, refining the selected designs through full traffic movement modeling, and development of the Environmental Assessment.

The Design Team will conduct new traffic counts for the Park Ave./KY 8 Intersection to capture traffic volume changes due to recent improvements to Park Ave. left-turn lanes and signal-timing changes at intersections on KY 8. Counts will be conducted again in July of 2008 to assess higher traffic volumes associated with summer activities.

The Design Team's traffic engineers will begin to fully model the Alternatives selected to move forward. This involves applying traffic volumes forecast for the year 2030 to the designs of the Alternatives, including modeling a fourth lane on I-471. All lane and intersection configurations in the Project area will be modeled and the modeling software will indicate how well the designs perform. This performance standard will be in the form of Levels of Service from A to F. Where

Next Steps (continued)

designs score lower, they will be revised, to the extent possible, to address failures without completely changing the designs' basic alignments and concepts.

Also at this time, the environmental investigations will begin in earnest. While the investigators have looked at Project area "red flag" issues relating to the human and natural settings, they will now have specific alignment areas to examine. This involves above ground and underground investigations and includes coordination with the resource agencies with oversight responsibility for areas such as the Historic Districts, Taylor Creek, and the floodwalls.

The Design Team anticipates that the next round of Advisory Committee/Consulting Parties and Public meetings will be before the end of 2007. We hope you will keep up with our activities through the web-site. We will be in touch again when the meetings are to be held.

We thank you for your input and continuing interest and hope that you will continue to participate through the www.471project.org web-site and Project meetings.

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