RECORD OF DECISION

US Route 20 (FAP 301)
JoDaviess and Stephenson Counties

FHWA-IL-EIS-00-03-F

September 22, 2005

1. BACKGROUND

History: For more than forty years, a formal public interest in improving U.S. Route 20 in northwestern Illinois has been evident. The Illinois State Legislature, in 1963, established the Transportation Study Commission (TSC) in order to study statewide transportation system needs and develop a long-range program for improvements. A 1967 TSC report identified a freeway location between Dubuque, Iowa and Rockford, Illinois. This freeway location was in response to an identified need to provide access to adjacent interstates and to improve east-west traffic service in northwestern Illinois. The Illinois Department of Transportation (IDOT) continued detailed study of potential locations for the freeway during the late 1960's and early 1970's. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) established a National Highway System (NHS) to continue the development of a prioritized national roadway network. The U.S. Route 20 is a NHS route, and this study was identified in ISTEA as a demonstration project.

Purpose and Need: The purpose of the proposed action is to provide an improved transportation system in JoDaviess and Stephenson Counties, to provide a facility that will properly address existing and projected system deficiencies, and to improve the safety and efficiency of the existing roadway system. The proposed action will address the needs of accommodating continuing development, increasing inadequate system capacity, addressing travel safety, improving community access and providing system continuity.

The growth in travel demand along existing U.S. Route 20 has increasingly affected flow, particularly during summer and fall weekends when tourists and part-time residents travel within and through the project area. Most of the existing route between Galena and Freeport does not meet IDOT's current design standards for a rural two-lane highway. Nearly fifty percent of the route contains horizontal and/or vertical curves that do not meet IDOT's current standards for a rural two-lane highway designed for 100 kph (60 mph). Both crash rates and crash frequencies have been consistently above statewide averages for a rural two-lane route during the past twenty years. The project as planned would address these concerns. Upon completion of the project and the Mississippi River Bridge in Dubuque/East Dubuque, U.S. Route 20 would have continuous four-lane capacity from Waterloo, Iowa to Rockford, Illinois.

2. DECISION

The preferred alternative as identified in the Final Environmental Impact Statement (FEIS) is the four-lane fully access controlled Longhollow Freeway with South Simmons Mound variation freeway (Alternative 2). The Federal Highway Administration (FHWA) has concluded that the preferred alternative: 1) best satisfies the Purpose and Need, 2) would cause the least impacts to the natural and human environment, 3) has been selected based on processes in compliance with the National Environmental Policy Act (NEPA) and other applicable requirements, and 4) may be advanced through detailed design and construction. The FHWA's decision is based upon full consideration of information

contained in the Draft Environmental Impact Statement (DEIS), the FEIS, public input received at various public information meetings held over a period of years, and a public hearing held on June 25 and 26, 2003. The decision is also based on public and agency comments pertaining to the proposed action; the other alternatives considered; the respective environmental consequences and measures taken to achieve avoidance and minimization of impacts; and the balancing of these considerations with the Purpose and Need for the project. Based on this decision, the preferred alternative will be hereafter referred to as the Selected Alternative.

The alternatives fully evaluated in the DEIS included ten freeway alignments and two expressway alignments between northwest of Galena and northwest of Freeport. The development of these freeway and expressway alternatives resulted from close coordination between IDOT and various state and federal agencies. The coordination relationships were established shortly after project initiation in 1993. Additional coordination with the project Advisory Council and its Work Groups, as well as agency and public comments received during the first several years of project work, helped to identify design alternatives to be further evaluated in the DEIS. The U.S. 20 Advisory Council and its five Work Groups, representing Agriculture, Economic Development, Environment, Government, and Tourism, were formed in 1993. The core for involvement activity was directed through the Advisory Council and its Work Groups. These groups used IDOT data and other technical information to evaluate alternatives and make recommendations. Many alternatives were assessed during early project investigations but were dismissed due to substantial insufficiencies. Several of these are described in the DEIS and FEIS. Of those alternatives carried forward for full evaluation, the Selected Alternative best meets the project purpose while resulting in the most reasonable combination of community, natural resource, agricultural, and cultural resource impacts. The Selected Alternative will also best meet the project's identified needs in the areas of continuing development, adequate system capacity, travel safety, community access, and system continuity.

The Selected Alternative comprises FEIS alternative alignment sections AB, BF, FG, GH(S), HJ, and JK. The Selected Alternative will be a 79.8 km (49.7 mi) long, four-lane freeway with grade separations at all intersecting roadways (i.e. a fully access controlled facility). The Selected Alternative requires approximately 1,127 hectares (2,784 acres) of new right-of-way. It will begin northwest of Galena near the existing intersection of IL Route 84 and U.S. Route 20. It will then proceed to the north and east of Galena, south of the Galena Territory, along the north side of Tapley Woods, north of Elizabeth and Woodbine, north of Stockton and south of Lena. It will end northwest of Freeport, tying into the western end of the U.S. Route 20 Freeport Bypass. Except for the termini, which tie in along the existing U.S. Route 20, the entire proposed freeway would be on new alignment. Where the placement of the Selected Alternative would eliminate access to the public road system, one of two approaches was applied based primarily on economic evaluation: construction of new access roads and/or bridges to restore and maintain property access, or purchase of remnant landlocked parcels. Many of the landlocked parcels will be used as locations for mitigation of identified forest and prairie impacts.

The Selected Alternative includes eight interchange locations as follows, all with diamond ramp configurations:

- Northwest of Galena (Existing U.S. Route 20 / Illinois Route 84)
- East of Galena (Existing U.S. Route 20 / Illinois Route 84)
- Galena Territory (west of Devil's Ladder Road)
- Elizabeth (Illinois Route 84 Extension to Elizabeth Scales Mound Road)
- Woodbine (Woodbine Road)
- Stockton (Illinois Route 78)
- Lena (Illinois Route 73)
- Northwest of Freeport (Bolton Road)

Local roadway network improvements are included at the interchange locations in order to meet projected traffic demand and transition back into the existing roadway system.

A total of 72 bridges are proposed for both crossroads and waterways. Thirty-four of these bridges, as well as approximately 80 culverts, will be provided for the proposed freeway and crossroads passing over waterways, including intermittent streams. Encroachment on the regulatory 100-year floodplain would occur at the following structure locations: Galena River, Smallpox Creek, Furnace Creek (IL Route 84 extension), Furnace Creek, Apple River, Yellow Creek Tributary A, Yellow Creek, Yellow Creek at Stees Road, Yellow Creek Tributary D (three locations), and Pecatonica River Tributary at A.Y.P. Road. The 18 bridged stream locations (some dual structures) include: Hughlett Branch Creek, Galena River, Tributary to Galena River, Tributary to Smallpox Creek, Smallpox Creek, Tributary to Longhollow Creek, Furnace Creek (mainline and IL Route 84 extension), Apple River, two Tributaries to Apple River, three Tributary's to Welsh Hollow Creek, Rush Creek, Tributary to Yellow Creek and Yellow Creek (mainline and Stees Road).

The Selected Alternative would impact a total of 1.47 hectares (3.63 acres) of wetlands from nine wetland sites, including four different plant communities.

Local roadway closures would occur at four locations: near Woodbine, near Lena (two locations) and at the eastern terminus northwest of Freeport. At each road closing, proposed nearby freeway interchanges will offset the effects of the roadway closures. Local roadway relocations are also proposed and will not result in adverse circuitous travel or substantial driver inconvenience.

The current estimated cost (2003 dollars) for construction of the Selected Alternative is $711 million.

3. ALTERNATIVES CONSIDERED

Alternatives Selected for Evaluation in the DEIS: The following alternatives were evaluated to determine the type and location of transportation improvements appropriate for the corridor:

No-Action Alternative: Under the No-Action Alternative, no changes would be made to U.S. Route 20 or the service road system in the project area. Only normal maintenance and repair of the existing roadways and associated structures would be carried out by IDOT and other jurisdictional agencies.

Upgrading of the Existing Facility: Existing U.S. Route 20 is a two-lane road for its entire length between the project termini. Therefore, construction of a new four-lane facility on the existing U.S. Route 20 alignment from Galena to Freeport was studied. Reconstruction of much of the existing roadway would be necessary to meet current design standards, but the basic roadway location would remain unchanged.

Build Alternatives on New Location: Numerous Build Alternatives on New Location were developed and evaluated. During initial studies, (an in-depth Corridor Analysis was prepared by IDOT in 1994) several Build Alternatives on New Location were dismissed from further consideration. These dismissed build alternatives included the following:

- an alignment through Scales Mound, passing north of Apple Canyon State Park and the Galena Territory;
- an alignment through Snipe Hollow, located from north of Elizabeth to north of Galena and passing along the east and north side of the Galena Territory;
- the Mound Hope Road Bypass, located north of Galena and bypassing Galena to the east;
- an interchange alternate at AYP road; and

- an alignment through Northwest Irish Hollow, located south of existing U.S. Route 20 from the Galena Territory to Elizabeth.

A total of 12 Build Alternatives on New Location were fully evaluated in the DEIS and FEIS. Ten of the twelve Build Alternatives on New Location were developed as freeways and the remaining two as expressways.

Freeway Alternatives: The freeway alternatives would be fully access controlled and would pass east of Galena; south of the Galena Territory and Lena; and north of Stockton. The Freeway Alternatives are as follows:

- Alternative 1 (Longhollow Freeway w/ North Simmons Mound Alternative)
- Alternative 2 (Longhollow Freeway w/ South Simmons Mound Alternative)
- Alternative 3 (Irish Hollow Freeway w/ North Simmons Mound Alternative)
- Alternative 4 (Irish Hollow Freeway w/ South Simmons Mound Alternative)
- Alternative 5 (Irish Hollow Tunnel Freeway w/ North Simmons Mound Alternative)
- Alternative 6 (Irish Hollow Tunnel Freeway w/ South Simmons Mound Alternative)
- Alternative 7 (Upper Irish Hollow Freeway w/ North Simmons Mound Alternative)
- Alternative 8 (Upper Irish Hollow Tunnel Freeway w/ North Simmons Mound Alternative)
- Alternative 9 (Upper Irish Hollow Freeway w/ South Simmons Mound Alternative)
- Alternative 10 (Upper Irish Hollow Tunnel Freeway w/ South Simmons Mound Alternative)

Expressway Alternatives: The alignments of the Expressway Alternatives generally follow the existing U.S. Route 20 alignment. They incorporate the bypasses of Galena, Elizabeth, Woodbine, Stockton, and Eleroy. The Expressway Alternatives are as follows:

- Alternative 11 (Expressway South Eleroy Alternative)
- Alternative 12 (Expressway North Eleroy Alternative)

Comparative Analysis of Alternatives: The project's Purpose and Need and the potential impacts expected for each alternative serve as the basis for comparing all alternatives. Alternatives 1 through 12 were selected for detailed evaluation as each would satisfy the project Purpose and Need. A comparison between the features and impacts of the alternatives follow.

No-Action Alternative: There would be no need for additional right-of-way, and there would be no measurable impacts under the No-Action Alternative. However, the No-Action Alternative would not accommodate continuing development, increase inadequate system capacity, address travel safety, improve community access, or provide system continuity. Consequently, the No-Action Alternative was eliminated (except for use in comparisons) as this alternative did not satisfy the Purpose and Need for the proposed project.

Upgrading of the Existing Facility: Construction of a new four-lane facility along the basic existing U.S. Route 20 alignment was considered. Reasons for dismissing this alternative from further consideration include the following:

- While some portions of the existing alignment could be converted to a four-lane facility, many portions in relatively rough terrain could not be.
- Current Design criteria could not be met in many areas, especially in JoDaviess County.
- Historic Buildings would be directly impacted in Galena.

- Sensitive areas such as the Tapley Woods Land and Water Reserve would be disrupted.
- Necessary strip right-of-way adjacent to the existing road would displace a high number of homes and businesses.

Build Alternatives on New Location dismissed from further consideration: Several Build Alternatives on New Location were dismissed from further consideration as a result of an in-depth 1994 Corridor Analysis prepared by IDOT. These alternatives and the reasons they were dismissed include:

Scales Mound Alternative:

- Potential direct and proximity impacts to the Apple River Canyon State Park and areas planned for park expansion
- Inadequate provision of access to Galena and the Galena Territory
- The continuing need for capacity improvements along existing U.S. Route 20

Snipe Hollow Alternative:

- Inadequate provision of access to Galena and the Galena Territory
- The continuing need for capacity improvements along existing U.S. Route 20
- A higher degree of localized property severance than other alternatives

Mound Hope Road Bypass Alternative:

- High number of property severances and displacements
- Close proximity to biological concerns at Smallpox Creek
- Costly construction with deep rock cuts and lengthy ramps to meet design standards

Interchange at AYP Road: (The Bolton Road interchange was adopted)

- Higher degree of property severance than an interchange at Bolton Road
- Potentially impact several residences including a possible historic structure
- Minimal potential to be extended south as a west-side beltline facility serving Freeport

Northwest Irish Hollow Alternative:

- Fails to meet community access needs for travel between Galena and the Galena Territory
- Potentially impact a greater number of farm properties than the other considered alignments
- Fails to provide adequate access for farm vehicles

Build Alternatives on New Location Fully Evaluated in the DEIS and FEIS:

A rigorous evaluation process was conducted which examined the viability of study alternatives relative to the potential of impacting known and potential cultural resources, agricultural land, threatened and endangered species, recreational properties, wetlands, floodplains, and known or suspected special waste sites. Other elements of evaluation included the crossing of areas with severe topography, the crossing of surface water bodies, and the severance of agricultural properties. The evaluation resulted in identification of the Selected Alternative.

Freeway Alternatives: The Freeway Alternatives can be divided into two groups according to whether the alignments bypass to the north or south of Elizabeth. The Longhollow group passes to the north of Elizabeth and contains alternatives one and two. The Irish Hollow group passes to the south of Elizabeth and contains alternatives three through ten. The Longhollow group requires less right-of-way and impacts less wetland than the Irish Hollow group. The Longhollow group requires an additional stream/river crossing but impacts less floodplain area

than the Irish Hollow group. The Longhollow group has less moderate and severe access changes for farm residences and non-farm residences and has a lower loss in local tax revenue than the Irish Hollow group.

Alternative 1 (Longhollow Freeway w/ North Simmons Mound Alternative):

This Alternative was eliminated for the following reasons:

- The Village of Stockton and the Stockton Chamber of Commerce expressed support for the South Simmons Mound alignment (Alternative 2) over the North Simmons Mound alignment (Alternative 1) based on economic development concerns. Alternative 2 would pass closer to the Village of Stockton.
- Alternative 2, based on its location, could provide one fewer interchange than Alternative 1, and therefore would require less agricultural land.
- Alternative 2 impacts slightly less wetland area, by .02 hectares (.05 acres).

Alternative 2 (Longhollow Freeway w/ South Simmons Mound Alternative):

This is the Selected Alternative. It will result in 3 business displacements and 34 residential displacements, including 25 farmsteads. Agricultural impacts include the loss of 340.8 hectares (842 acres) of prime farmland, severance of 98 parcels, and land locking of 34 parcels. Natural resource impacts include the loss of 111 hectares (274 acres) of upland forest and 1.47 hectares (3.63 acres) of wetland, and placement of 22,298 square meters (240,017 square feet) of fill into 12 base (100-year) flood plains. There is the potential for impacts to surface and ground water, wildlife, the visual environment, and noise levels as described in the FEIS. In comparisons to the other alternative considered, the Selected Alternative has the lowest level of agricultural severances, wetland impacts, and floodplain involvement. In other areas, the Selected Alternative has impacts similar to other alternatives, usually on the low end. The Selected Alternative is also the environmentally preferred alternative.

Alternative 3 (Irish Hollow Freeway w/ North Simmons Mound Alternative);
Alternative 4 (Irish Hollow Freeway w/ South Simmons Mound Alternative);
Alternative 5 (Irish Hollow Tunnel Freeway w/ North Simmons Mound Alternative);
Alternative 6 (Irish Hollow Tunnel Freeway w/ South Simmons Mound Alternative):

These Alternatives were eliminated for the following reasons:

- The alignments are longer and would require more right-of-way than the Selected Alternative, by 52 to 77 hectares (128 to 190 acres).
- The alternatives would impact more prime farmland by up to 25 hectares (62 acres).
- The alternatives would impact more floodplain area by approximately 2,185 square meters (23,520 square feet).
- The alternatives would impact between 3.44 hectares (8.49 acres) and 3.49 hectares (8.62 acres) of wetlands. This compares to 1.47 hectares (3.63 acres) impacted by the Selected Alternative.
- The alternatives would be located in a creek valley south of the Village of Elizabeth, and local concerns were raised regarding floodplain impacts, interchange access, and the potential for future development in this area.
- Habitat for the state-endangered timber rattlesnake could be impacted by the alternatives.

Alternative 7 (Upper Irish Hollow Freeway w/ North Simmons Mound Alternative);
Alternative 8 (Upper Irish Hollow Tunnel Freeway w/ North Simmons Mound Alternative);

Alternative 9 (Upper Irish Hollow Freeway w/ South Simmons Mound Alternative);
Alternative 10 (Upper Irish Hollow Tunnel Freeway w/ South Simmons Mound Alternative):

These alternatives were eliminated for the following reasons:

- The alternatives would require more right-of-way than the Selected Alternative by 13 to 37 hectares (32 to 91 acres).
- The alternatives would impact more prime farmland by up to 26 hectares (64 acres).
- The alternatives would impact more upland forest by between 62 hectares (15 acres) and 13.2 hectares (33 acres).
- The alternatives would impact more floodplain area by approximately 1,893 square meters (20,376 square feet).
- The alternatives would impact between 3.56 hectares (8.79 acres) and 3.61 hectares (8.92 acres) of wetlands. This compares to 1.47 hectares (3.63 acres) impacted by the Selected Alternative.
- The alternative would be located to the south of the Village of Elizabeth, and local concerns were raised regarding access and the potential for future development in this area.

Expressway Alternatives - Alternative 11 (Expressway South Eleroy Alternative) and Alternative 12 (Expressway North Eleroy Alternative): While all of the Build Alternatives on New Location provide for adequate system capacity, provide adequate community access, afford system continuity, and address safety concerns, the Freeway Alternatives provide a greater degree of safe travel through the project corridor than the Expressway Alternatives. This is primarily due to the introduction of grade-separated interchanges and elimination of other access points. The IDOT's traffic crash data supports the general literature consensus that grade-separated interchanges provide a greater level of safety than at-grade and signalized intersections, such as those that would be constructed with the Expressway Alternatives. The Expressway Alternatives would result in higher impacts in the areas of residential (53 to 64) and commercial (5 to 6) displacements, tax revenue loss, access changes, wetlands (up to 6.4 hectares or 15.6 acres), forests, floodplains, and natural areas, when compared to the Freeway Alternatives. Thus, the Freeway Alternatives were shown to better meet the Purpose and Need for the project and the Expressway Alternatives were eliminated.

Selected Alternative - Alternative 2 (Longhollow Freeway w/ South Simmons Mound Alternative):
The evaluation of consequences of each of the study alternates resulted in the recommendation of a single Selected Alternative. The Selected Alternative is the environmentally preferred alternative and best satisfies the Purpose and Need while overall avoiding and/or minimizing impacts to cultural resources, agricultural land, and the human and natural environment.

4. MITIGATION, COMMITMENTS AND MEASURES TO MINIMIZE HARM

Throughout the process of identifying and evaluating alternatives, effort was made to minimize the social, economic, and environmental impacts of the project while fulfilling the project's Purpose and Need. The FHWA and IDOT commit to the mitigation measures for this project as described in the following section. The IDOT will implement and provide oversight of the mitigation measures, and FHWA will ensure that mitigation measures are carried out through project development and construction.

Social Impacts (Road Closure/Access): The four roadway closures occur within approximately one mile of proposed interchanges and will be addressed through the construction of connecting local routes or the upgrade, as necessary, of existing roadways to accommodate increased traffic due to adjusted traffic patterns.

The Selected Alternative involves four roadway closures. Fourteen farms will be directly affected by access changes, with five farms having moderate access inconvenience and nine farms having severe access inconvenience. There is also one severe access change expected for a non-farm residence. None of the roadway closures are expected to cause more than minor inconveniences to school bus routes and would not result in adverse affects on access to fire protection and emergency services. It is not anticipated that any other public service or facility will be affected.

Social Impacts (Relocations): Residential relocations will be conducted in accordance with the Uniform Assistance and Real Property Acquisition Act of 1970 (as amended). Property acquisition will be staged to correspond with each construction section therefore alleviating increased demand on available, comparable housing.

The Selected Alternative will result in the displacement of 34 residences. Of these, 25 are farmstead residences, and 9 are non-farm residences. The Selected Alternative will also displace a total of three businesses.

Economic Impacts: The displaced businesses and farmland will be purchased in accordance with the Uniform Assistance and Real Property Acquisition Act of 1970 (as amended). The proposed project would stimulate the regional economy during the construction phase, resulting from material purchases, construction payrolls, and related indirect and induced spending, or "multiplier effects".

Three businesses, employing no more than five employees, will be displaced. None are classified as "one of a kind" and will not create a loss of a particular service or product. Eighty-three percent of the acquired property will be agricultural, specifically pasture and cropland.

Agricultural Land: Owners of agricultural land will be compensated for the property acquired and any loss of utility of the remaining areas of tracts partially acquired. The flow of farm drainage tiles will be maintained along the right-of-way through construction of vaults and pipes as necessary.

The Selected Alternative will require 974 hectares (2,428 acres) of agricultural land in JoDaviess and Stephenson Counties. Of those 974 hectares (2,428 acres), 343 hectares (842 acres) will be prime farmland; 442 hectares (1,087 acres) will be important farmland. A total of 401 hectares (986 acres) will be from Soil Capability Classes I & II.

Cultural Resources: The Selected Alternative will not impact any prehistoric or historic sites. The Selected Alternative will avoid all mounds and cemeteries. The Selected Alternative will not impact any archeological sites.

The cultural resources survey for the project corridor identified 300 historic-period structures. The identified archeological sites are not associated with federally recognized tribes and are associated only with habitation and industrial site.

Air Quality: Any potential air quality impacts will be associated with demolition or construction and will be short term in nature only. These will be addressed during the construction phase in accordance with IDOT's specifications or special provisions on dust control.

Noise: No operational noise mitigation is proposed. Construction noise will be controlled in accordance with IDOT's standard specification or special provision applicable to construction noise.

The identified impacted noise receptors are scattered too far to permit noise barriers to be built at a reasonable cost. Therefore, noise barriers were not studied for areas, communities, and subdivisions with less than six sensitive receptors.

Geological Resources (Karst Features): The Selected Alternative will be located to minimize involvement with karst or other critical features present in the underlying carbonate rocks. This is to avoid instability from the increased loading on existing rock cavities or the removal of structurally sound overburden and rock cover over existing cavities. Of the 12 alternatives, the Selected Alternative encroaches upon the fewest known karst features. No known karst features will be impacted by the project. However, it is recognized that some karst features are not fully identifiable and during construction, some of these features may be uncovered. At that time, IDOT will analyze the situation and obtain a solution that will avoid these features becoming direct conduits for highway runoff to enter the groundwater.

The IDOT plans to implement specific procedures for mitigating project impacts in karst areas. Before construction plans are developed, IDOT will utilize Ground Penetrating Radar (GPR), Earth Resistive Tomography (ERT), or other appropriate means of identifying karst features along the entire alignment in areas of potential karst involvement. In particular, through the use of special consultant expertise, IDOT shall determine the location of sinkholes, caves, underground streams, and other related karst features and their relationship prior to final design of the proposed roadway profile and key cross section elements. The IDOT will then apply appropriate measures to avoid impacts and/or offset unavoidable impacts to the identified karst features. Specifications for protection of groundwater in karst areas will be developed by IDOT, including means for addressing specific field conditions, and detailed design drawings will be prepared. Requirements will be placed on contractors to perform their necessary machinery maintenance away from susceptible features such as sinkholes. Storm water runoff drainage designs will convey runoff to discharge points outside the vulnerable areas, as appropriate. Peat filters, wide grass swales, and detention basins will be assessed as various means of controlling runoff and implemented where appropriate and effective. Erosion control systems to protect known karst areas will be fully implemented prior to the associated construction activities and will be modified to protect karst areas discovered at time of construction. During construction, detailed visual inspections near karst features will be made on a weekly basis and after every rain, and appropriate corrective actions will be taken. The location and nature of known and newly discovered karst features will be documented before and after construction. A long-term monitoring and maintenance plan will be implemented to protect surface water and ground water quality near the documented karst features.

The IDOT commits to working with local officials in JoDaviess County to assist in their efforts to control growth within karst areas. Such growth could cause secondary groundwater impacts from the use of septic tanks and other features of development. The use of septic tanks can impact groundwater more quickly in karst areas. Therefore, the use of a sanitary sewer is preferred to avoid impacts to groundwater. The Illinois Department of Public Health requirements for private sewage disposal (2003) include provisions for investigating and designing per local soil conditions. Galena City Ordinance 52.007 states "the owner of all houses, buildings, properties used for human occupancy, employment, recreation, or other purposes situated within the city and abutting on any street, alley or right-of-way in which there is now located or may in the future be located any public sanitary sewer of the city is hereby required at his expense to install suitable toilet facilities therein, and to connect such facilities directly with the proper public sewer in accordance with the provisions of this chapter." Among Galena's Comprehensive Plan goals for their sanitary sewer are: to continue the extension of city water and sewer services to all residential homes where feasible in the city, to require all homeowners to connect to city water and sewer services as they are extended to their lot line, and to develop a policy on the extension of utilities to the edge of the city to provide for future development. The City of Galena's existing ordinances on land uses and site planning to reduce sprawl include minimum site area, minimum yard requirements, residential

development density, development mix, and size of development and required percentage of uses. The Comprehensive Plan recommendations for future land use and developments include:

- Controlling growth on the edges of the City of Galena by purchasing the right of first refusal for properties in and around the end of the future U.S. Route 20 bypass;
- Revising City ordinances to require developments to occur in a rational, planned out manner, to avoid "leap frog" development from occurring;
- Developing a zoning ordinance that allows the construction of "traditional neighborhood design" developments; and
- Developing a zoning ordinance that allows the construction of cluster developments.

Geological Resources (Groundwater): Potential impacts to groundwater resources from the proposed project include encroachment into Wellhead Protection Areas and setback zones; loss of aquifer recharge area, and impacts to groundwater quality by contaminants associated with the project-related construction period and post-construction activities. An inventory of wells located near each alternate was conducted in 2001. Although 26 of the 171 wells identified by the Illinois State Geologic Survey (ISGS) are within 61 meters (200 feet) of the centerline of the alternates, the 61-meter (200-foot) wellhead setback is only relevant for routes or sources of groundwater pollution. Since the project will not introduce any new routes or sources, there will be no violation of the wellhead setback requirements. Aquifers in the project area recharge by the infiltration of precipitation. Due to the presence of a relatively impermeable weathered zone, stream alluvial deposits would be the areas most vulnerable to impacts from the loss of recharge area. Portions of these alluvial deposits will be crossed on structure; in those locations, there will be no loss in aquifer recharge area. Where the roadway is not on structure, the runoff from the new paved roadway surface will primarily be directed to grassed medians and roadside ditches or local streams. The replacement of pervious ground surfaces with impervious roadway surfaces will result in some loss of aquifer recharge area. However, the impacts to the aquifer system of the project area will be small.

During construction, existing potential sources of contamination (e.g., disturbed contaminated sediments and groundwater) will be identified to the extent possible. Unconfined sand and gravel aquifers and shallow, highly fractured bedrock aquifers are most vulnerable to water quality impacts, particularly in karst areas. If future investigations reveal that construction activities along the Selected Alternative will encounter contaminated soils and/or groundwater and potentially impact karst aquifers, the applicable waste disposal, dewatering, and effluent discharge rules and regulations will be followed, and the proper permits will be obtained.

Geological Resources: Highly erodible soils occupy approximately 9,238 hectares (22,826 acres) of the project area. Areas of highly erodible lands are mainly confined to steeply sloping upland areas. The Selected Alternative will be placed on an alignment so as to minimize soil cuts and long-term maintenance issues, including sloughing. Blasting operations will be employed only where necessary and will be controlled to prevent vibration impacts.

The Selected Alternative will traverse areas that have abandoned mines, especially surrounding Galena and Elizabeth. The nine known mines within 152 meters (500 feet) of the proposed right-of-way are not expected to be impacted by the Selected Alternative.

There is a potential need for borrow sites as part of the construction of the project. All proposed borrow locations and designs will undergo detailed review for potential impacts prior to construction. Impact avoidance and minimization for borrow sites related to biological resources, natural areas, trees, and other resources will be undertaken and documented through an IDOT permit process.

Additional measures that will be taken by IDOT with respect to protection of groundwater in karst areas include the following:

- Drainage entering from beyond the right-of-way will be treated according to the same process as direct highway runoff.
- Hazardous material traps will be constructed at storm water outfalls to protect karst features from spill contamination.
- A maintenance strategy will be developed that will include low-salt and no-spray (herbicide) provisions.
- Prior to completion of design plans, detailed provisions for offsetting impacts to karst features will be developed and submitted for review and comment to the Illinois Department of Natural Resources (IDNR), Illinois EPA (IEPA) and the U.S. Fish and Wildlife Service. All approved provisions will become part of the contract documents for the project.

If during construction alterations to the maintenance strategies are needed, proposed changes that still meet treatment goals will be immediately developed and submitted to the agencies for review so that work is not unduly delayed.

Biological Resources (Forest/Wooded Property): The Selected Alternative will impact approximately 110.7 hectares (274.0 acres) of upland forest. Approximately ninety percent of the impact to upland forest occurs between Galena and Woodbine. The loss of 110.7 hectares (274 acres) of upland forest will be mitigated in the form of forest restoration. Specific canopy, shrub, and herbaceous layers will be established. Five parcels of land that lies between the proposed project and the Tapley Woods Land and Water Reserve will be utilized for upland forest restoration. These five parcels are currently in upland forest or pastureland. The parcels contain 81.3 hectares (200.8 acres) of land, of which 39.4 hectares (97.4 acres) are not forested. The addition and successful forest restoration at these locations will add an additional 81.3 hectares (200.8 acres) of forested land under public ownership. The IDOT has proposed a formal agreement with the IDNR regarding this and other mitigation for biological resources; details regarding property transfer to IDNR are yet to be determined. The IDOT will identify and acquire additional land areas with non-wooded sections and plant trees for the express purpose of mitigating the overall impacts to wooded areas at an aggregate of one-to-one ratio (planted to removed). A tree/shrub plan will be prepared and coordinated with IDNR. The IDOT will replant riparian trees and shrubs in the floodplains within highway right-of-way of the Galena River, Apple River, Smallpox Creek, Unnamed Tributary of Longhollow Creek, Furnace Creek, Yellow Creek and the Yellow Creek tributaries. The IDOT will also attempt to obtain agreements with the adjacent property owners to plant trees and shrubs on their property within the riparian corridor. The goal of the mitigation is the long-term restoration of upland forest dominated by species of oak and hickory.

Biological Resources (Wildlife): The major cover types important to wildlife that would be affected by the Selected Alternative include upland forest and wetlands. There are patches of native grassland, but these areas are too small to have much wildlife value.

Wildlife impacts were assessed from the standpoints of right-of-way access, construction, and operation of the proposed highway. This includes the fragmentation and isolation of existing habitat, the disruption of wildlife movement, and the mortality of individual wildlife species.

The Selected Alternative will fragment approximately 158 hectares (390 acres) of upland forest located just west of the Tapley Woods Land and Water Reserve. These impacts will result in the loss of neo-tropical migrant and bird-breeding habitat. The direct and indirect loss of potential breeding habitat for neo-tropical migrant bird species will be mitigated in several ways. First, the inadvertent loss of nesting birds in the construction area will be avoided by the imposition of a tree clearing restriction. Tree removal will not be allowed between April 15 and September 5 of any given year. This restriction applies

to the area west of the Smallpox Creek to west of Furnace Creek containing habitat for neo-tropical migrant species. Secondly, the loss of habitat will be mitigated by the purchase of approximately 81.3 hectares (200.8 acres) of land adjacent to the Tapley Woods Land and Water Reserve. The acquisition of this land will serve to reduce the edge effects and improve nesting success in the Land and Water Reserve. Of these, 39.4 hectares (97.4 acres) are not forested. These areas will be restored to upland forest. Thirdly, the IDOT will consult with IDNR concerning the future of existing U.S. 20, which currently divides the Tapley Woods Land and Water Reserve. The drop in traffic volumes on this route may provide additional management options for neo-tropical migrants in this area.

Potential impacts to wildlife populations due to vehicle collisions have been considered. Over the last 10 years, approximately twenty percent of the accidents along existing U.S. Route 20 were collisions with animals, predominantly deer. The Selected Alternative would be expected to reduce vehicle/animal collisions because it will have fencing as well as much improved sight distances. The proposed project design includes the standard 1.2 meter (4-foot) high fencing along the right-of-way line. In addition to this fencing, a special 2.5 meter (8-foot) high fence will be installed at the wildlife crossings (culverts and bridges) to "funnel" wildlife into the crossings.

The proposed bridged streams and river crossings will be designed so as to maintain several potential wildlife movement corridors. The patterns of movement of wildlife throughout the Selected Alternative alignment have been identified and will be accommodated by providing longer span bridges that do not impact riparian areas adjacent to rivers and streams, over-sizing proposed drainage culverts under the proposed roadway to accommodate wildlife crossings, and installing crossings specifically to accommodate wildlife. An area of high habitat value occurs adjacent to Tapley Woods Land and Water Reserve between Smallpox and Furnace Creeks. In this area, the IDOT will install both medium and large sized culverts (at least seven total) in some of the fill areas near Tapley Woods and in other appropriate locations. These culverts will not be associated with drainage, but will allow wildlife safe passage across the roadway. These culverts will be a minimum of 1.5 meters by 1.5 meters (5 feet by 5 feet -- medium size) spread 152 to 274 meters (500 to 900 feet) apart; and 3 meters by 3 meters (10 feet by 10 feet -- large size) spread 1.0 to 1.1 kilometer (0.6 to 0.7 miles) apart. Culverts constructed in the fill areas cannot be designed to open in the median. Since ambient light is a critical factor for usage of wildlife underpasses, light will be provided by placing two vaults near the center of the culverts. The vaults would be above the median ditch flow line to prevent excessive drainage into the culverts. In an attempt to eliminate some of the barriers created by the new roadway to wildlife movement, the bridges are being designed with longer spans. The spans will be extended to provide a minimum of 3 meters (10 feet) of dry ground above the 50-year flood elevation on each side of the stream.

Three wildlife species have been identified as endangered and threatened species by IDNR within the project area. These species are the timber rattlesnake (*Crotalus horridus)*, Franklin's ground squirrel (*Spermophilus franklinii)*, and the Cerulean warbler (*Dendroica cerulean*).

Timber rattlesnakes move away from their den sites in spring and back to them in the fall. It has been recommended that an area 2.4km (1.5 miles) in radius around a den should be safeguarded to protect a viable population of timber rattlesnakes. In addition, a buffer zone of 1.6km (1.0 mile) beyond this is recommended where some human incursion is allowed. A herpetologist from the Illinois Natural History Survey will be employed to determine whether or not the timber rattlesnake occurs within the constructions limits before construction begins and during construction. At least seven culverts will be constructed to allow for safe crossing of the roadway by the timber rattlesnake and other wildlife in the Tapley Woods area. The herpetologist will begin the survey about one month before construction begins. Any rattlesnakes identified within the construction area will be relocated during the construction phase prior to direct impacts.

The habitat for Franklin's ground squirrel consists of tall, dense cover of grasses, forbs, shrubs, and small trees; they avoid the short grass of grazed pastures or mowed areas. In the project area, suitable habitat could be the prairie areas along the railroad rights-of-way. The project will impact approximately 0.3 hectares (0.8 acres) of dolomite hill prairie. The hill prairie does not contain the dense cover required by the squirrel. Franklin's ground squirrel has not been reported from JoDaviess County since 1943. Based on this information, the project is not expected to impact the Franklin's ground squirrel.

The Cerulean warbler is known to occur in the Tapley Woods Land and Water Reserve. This species could occur in the adjacent forested areas that will be impacted by the proposed project. To avoid killing the species during construction, a tree clearing restriction will be put into place. Land acquisition adjacent to Tapley Woods will serve as a buffer and should reduce the edge effects and improve nesting success for the Cerulean warbler. With the tree clearing restriction and the purchase of approximately 200 acres of land adjacent to the Land and Water Reserve, the project is not expected to affect the Cerulean warbler.

The construction of the Selected Alternative will create conditions that may allow for the establishment of populations of invasive/nuisance species of plants that already occur within the project area. The IDOT has adopted practices to minimize the introduction and spread of invasive plant species. The IDOT will control invasive plant species by the application of herbicides as discussed in the DEIS.

Biological Resources (Prairie): The Selected Alternative will impact one dolomite hill prairie. The site is approximately 5.4 hectares (13.4 acres) in size and is dominated by little bluestem and eastern red cedar. The IDOT will pursue the acquisition of a conservation easement for a portion of two farm tract parcels located immediately adjacent to the dolomite hill prairie. The easement will be sought in order to protect approximately 5.4 hectares (13.4 acres) of the remaining dolomite prairie. The IDOT will also purchase the 4.21 hectares (10.4 acres) landlocked parcel located north of Buckhill Road for the establishment of a mesic prairie. A prairie mitigation plan will be prepared and coordinated with IDNR for this location. This action will mitigate the 0.4 hectares (1.0 acre) of native grassland that will be impacted by the Selected Alternative.

Surface Water Resources and Water Quality: The project is not expected to exceed the potential Total Maximum Daily Load (TMDL) program goals of the impaired streams in the project area. With regard to the Galena River, the designated use impairments (aquatic life, fish consumption, swimming) are potentially caused by pH, PCB's, pathogens, suspended solids, and habitat alterations (other than flow). The potential sources of these impairments are from agriculture, urban runoff/storm sewers, channelization, and unknown sources. The proposed construction of a bridge over the Galena River will not contribute to the above-mentioned impairments. Potential highway impacts are not associated with pH, PCB's, pathogens, or suspended solids. Habitat alteration of the Galena River will consist of permanent loss of trees along the banks of the river (area under the bridge) and pier placement within the river (loss of substrate). Temporary impacts will occur with placement and removal of clean, aggregate material to be used in causeways across the river for construction equipment. Once construction has been completed the river bed will return to its original condition.

Construction impacts to water quality activities will be short-term and limited to potential increases in turbidity and siltation due to clearing and grading adjacent to the crossing and the placement of bridge piers. Erosion and sediment controls will be implemented in accordance with IDOT's *Standard Specifications for Erosion and Sediment Controls* in order to minimize impacts. Construction represents a short-term event and will not contribute to long-term impairment of the river. During the operation of the roadway, material will wash-off the road surface, becoming suspended solids. Most of these solids will be bound in the adjacent vegetated ditches. The material washed off the bridge deck will enter into the river. However, with forecasted average daily traffic (ADT) of 25,000 vehicles, this contribution of total suspended solids to the river is minor.

Traffic related pollutants such as oils, greases, lead, zinc, manganese, and nickel are generated through the normal operation of vehicles on the roadway. In addition, de-icing agents, such as sodium chloride and calcium chloride, singularly or in combination, are added to roadway surfaces in order to prevent snow and ice from bonding to the pavement. All of these materials can be present in roadway runoff. Research has shown that the number of vehicles using a facility is the single strongest predictor of pollutant load, and that in rural areas roadways with ADT of less than 30,000 generally have no measurable impact on water quality. The projected design year ADT for the proposed roadway is less than 30,000, and the project is not expected to measurably affect water quality.

The roadway drainage system will consist primarily of open, vegetated ditches. No storm sewers/urban runoff will be associated with the roadway, except where necessary to redirect flows away from karst features. The Apple River and Yellow Creek are impaired by pathogens from unknown sources. The project will not contribute to a potential increase in pathogens. The project is not expected to exceed the potential TMDL program goals for these streams.

Potential impacts to fish will be further reduced by conducting any in-stream work outside of the fish spawning periods, approximately April through July.

Floodplains: In accordance with Executive Order 11988 (Floodplain Management) and Title 23 of the Code of Federal Regulations (CFR) Section 650, Subpart A, the project has been evaluated for floodplain impacts. The project involves eight transverse and four longitudinal encroachments. Construction of the Selected Alternative will conform to all applicable State and local floodplain protection standards. It has been determined that there is no practicable alternative to the proposed construction in floodplains, and that the proposed action includes all practicable measures to minimize harm to these resources.

Wetlands: The Selected Alternative has the least wetland impacts of the alternates fully evaluated, with a total of 1.47 hectares (3.63 acres) from nine wetland sites. Measures to minimize harm to wetlands have been coordinated with federal and state agencies and the general public. Wetland mitigation is being proposed at the Kilbuck Creek Wetland Bank, south of Rockford. A total of 7.18 hectares (17.75 acres) of wetland credits will be purchased. There is no practicable alternative to construction in the wetlands of the project area, and the project includes all practicable measures to minimize harm to the wetlands that may result from construction.

Special Waste: The Selected Alternative will not involve nor impact any Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) sites nor other sites potentially impacted with regulated substances.

Visual/Aesthetics: The proposed project offers great potential for the inclusion of mitigation measures that blend into the existing landscape. The Apple River is listed as a candidate Wild and Scenic River by the National Park Service based on its Outstandingly Remarkable Values. The IDOT will consider the use of scenic bridge design, landscaping, and the planting of woody riparian vegetation in the adjacent Apple River floodplain to reduce visual impacts as much as possible. The IDOT commits to actively pursue the involvement of the National Park Service and IDNR as part of the project design coordination in the vicinity of the Apple River.

Lighting for the project will be established only at the eight interchanges. At these interchanges, only partial interchange lighting will be installed. Lighting would occur at both ramp gores along U.S. 20 and at the ramp terminal intersections. The bridges over U.S. Route 20 at these interchange locations would also be lighted. The IDOT is considering “full cutoff” lighting that directs light only to the locations needed. The potential impact is considered minor but long-term.

Public Involvement: The IDOT commits to the Advisory Council's recommendation "ensuring that a citizen advisory group is involved in the design and construction of the facility to ensure effective mitigation of the negative impacts of the project". Review and comment periods will be afforded to a citizen's group to be established during the project design phase. The IDOT also commits to actively pursue the involvement of the U.S. Department of the Interior as part of the public involvement.

5. COMMENTS ON THE FEIS

The Notice of Availability for the FEIS was published by the U.S. Environmental Protection Agency (USEPA) in the December 17, 2004, Federal Register with a close of public comments date of January 17, 2005.

Letters were received from the USEPA, IDNR, Illinois Department of Agriculture (IDOA), JoDaviess Conservation Foundation, the Karst Coalition against the Proposed U.S. Route 20, the Freeway Watch Committee, the Galena Territory Association, the Stephenson County Highway Department, and a number of private citizens.

Responses have been transmitted from IDOT to those providing comments. Some of the responses below have been summarized for this document.

Federal Agencies

USEPA: The letter from the United States Environmental Protection Agency (USEPA), dated January 27, 2005, addressed three remaining "unresolved concerns" to be addressed in the ROD. These were: 1) Explaining the IDOT's plans for mitigating project impacts in karst areas by locating karst features, implementing measures to minimize runoff into karst areas, and monitoring water quality; 2) Elaborating on the IDOT's plans for addressing secondary impacts and controlling induced growth within karst areas, including a commitment to working with local officials; and 3) Explaining how the proposed project would affect the Total Maximum Daily Load goals for the Galena River and that it would not be a significant factor affecting the impaired status of the river.

> ***Response to Comments:*** The IDOT commits to following specific procedures for mitigating project impacts in karst areas. These commitments are stated in this Record of Decision (ROD) under Section 4. Mitigation, Commitments and Measures to Minimize Harm – Geological Resources. The IDOT also commits to working with local officials in JoDaviess County to address secondary groundwater impacts and in their efforts to control growth within karst areas. Finally, the IDOT has provided a more substantial explanation regarding how the proposed project would not be a significant factor affecting the impaired status of the Galena River, as stated in this ROD under Section 4. Mitigation, Commitments and Measures to Minimize Harm – Surface Water Resources and Water Quality.

State Agencies

IDNR: The letter, dated January 6, 2005, by IDNR states the coordination and consultation is closed on this project unless there is a change in scope. The IDNR requests that the proposed property transfer of 110.9 hectares (274 acres) in the vicinity of IDNR Tapley Woods Land and Water Reserve be fully reviewed by both agencies as the details of the project develop before a final commitment is made by the IDNR.

> ***Response to Comments:*** No response necessary.

IDOA: The letter, dated January 24, 2005, states the IDOA has determined that Alternative 2 meets the intent of the IDOA's Agricultural Land Preservation Policy and complies with the state's Farmland Preservation Act.

Response to Comments: No response necessary.

IEPA: The letter, dated February 17, 2005, by IEPA states no objectives to the project and confirms the need for an National Pollutant Discharge Elimination System (NPDES) permit from the IEPA Division of Water Pollution Control.

Response to Comments: No response necessary.

Local Agencies

Village of Lena: The letter, dated January 17, 2005, expressed interest in a second interchange in the vicinity of Lena. The village stated concerns that traffic accessing Lena would otherwise be overly concentrated along IL 173, potentially compromising safety and increasing the village's liability exposure and financial commitment to the local road system near the interchange.

Response to Comments: Refer to the response below to the Stephenson County Highway Department.

Stephenson County Highway Department: The letter, dated February 4, 2005, requested a feasibility study for a second interchange in the vicinity of the Village of Lena. Specifically, a proposal has been developed by the County for an interchange with realigned Galena Road. If the second interchange (in addition to the proposed IL 173 interchange) is not included, there will be negative impacts on existing businesses and the local economy. Emergency services and hazardous material transport were additional concerns described in the letter.

Response to Comments: There are two major reasons why a second interchange was not included in the vicinity of Lena, specifically at Galena Road. First, the distance from the proposed IL 173 interchange to this second Lena interchange would be only 1.1 to 1.5 miles, depending on the interchange configuration. This is well below IDOT's standard minimum spacing of 3 miles for rural interchanges. This minimum is established so that freeway access can be consolidated and the facility design can provide a maximum degree of safety. Second, an interchange at Galena Road would be potentially very costly and require a large area of right-of-way. The possibility of an interchange at Galena Road was considered in 1994 and 1995 as part of project investigations, but was found to be unacceptable for the reasons stated. Subsequently, a roadway parallel and north of the U.S. Route 20 freeway was assessed and eventually included in the project to address local access concerns. The overall design for this area adequately addresses access, safety, and emergency services at a reasonable cost.

Groups and Organizations

JoDaviess Conservation Foundation: The letter, dated January 21, 2005, by the JoDaviess Conservation Foundation states concerns regarding protection of the natural heritage, spectacular scenery, and agricultural character of the JoDaviess County area. It states that the FEIS is unresponsive to concerns raised by the Foundation in the past and that a formal citizens' advocacy group should be formed to work with IDOT on this project. Also, the Foundation recommends a percentage of the cost of the project be allotted to the preservation, protection, and enhancement of the "precious natural heritage" of the area.

Response to Comments: A citizens' group will be established during the project design phase. The IDOT cannot assign a percentage of project cost to be committed to preservation, protection, and enhancement. However, IDOT remains committed to providing a proposed project that will protect the unique geography and scenery of Northwestern Illinois, as described in the DEIS and FEIS. Opportunities for committing capital resources to preservation and enhancement of natural resources will be investigated during the design phase of the project.

C&W Research & Consulting Report prepared for the Karst Coalition Against the Proposed U.S. Route 20 (FAP 301) Corridor and its Longhollow Alignment. The letter/report contained a large number of comments.

Comment 1: The environmental impacts associated with this project have not been adequately evaluated and environmental considerations were not integrated into the entire planning process. An additional EIS should be required before the project can proceed.

Response 1: Twelve design alternatives were developed, evaluated in detail, and documented in the Draft EIS. During the screening process, several other alternatives were considered but dismissed due to a range of negative environmental or socio-economic impacts. A comprehensive environmental assessment was conducted concurrently with the development of design alternatives allowing modifications to be incorporated into the designs to reduce or eliminate environmental impacts associated with portions of the alternatives. The EIS process used on this project was interactive with the public and various government agencies beginning with the EIS scoping meetings and continuing though the Draft and Final EIS steps that allowed for public participation and input. The Final EIS contains the final revisions to the Draft EIS based upon public and government agency input and comments. This EIS process has produced a Preferred Alternative that has the fewest overall environmental consequences.

Comment 2: The No-Action and the Roadway Improvements to Existing Alignment alternatives were not rigorously explored or objectively evaluated.

Response 2: Consistent with NEPA requirements, a full range of alternatives was evaluated to a level of detail sufficient to ascertain whether or not the project Purpose and Need was met by an alternative. The results of this screening process are summarized for the No-Action Alternative in Section 3.1.1 of the DEIS. Section 3.2 of the FEIS outlines the numerous significant reasons why it was not possible to identify an upgrade alternative that meets the project Purpose and Need without impacting sensitive environmental or historic resources and without significant residential and business displacements.

Comment 3: There is insufficient detail presented in the Draft and Final EIS regarding karst terrain. The Final EIS appears to dismiss karst features as minimal. Without detailed mapping, the geotechnical design development process is questionable.

Response 3: One of the controls used during the development of design alternatives was that roadway segments were located in a manner that avoided and minimized, to the extent practical, any potential impacts to known karst resources. Quantitative measures used during the preliminary design included the evaluation of alternatives based on their location with respect to known karst features and underlying carbonate bedrock. Widely accepted industry standards include the close association of karstification with areas underlain by carbonate bedrock and the use of sinkhole abundance as a diagnostic karst landform. On this basis, it was appropriate and prudent to use this information to screen the design alternatives on a consistent basis.

While it is recognized that some karst features are not fully identifiable with the current mapping, it should also be recognized that it was not feasible as part of the EIS process to locate and identify every karst feature within the areas covered by the alternatives, a large portion of

JoDaviess and Stephenson Counties. As part of this ROD, IDOT has committed to conducting a comprehensive karst investigation along the corridor of the preferred alternative during Phase II engineering. This karst investigation will include ground penetrating radar, earth resistive tomography, subsurface investigations, and/or other appropriate means to identify karst features that may include subsurface voids, cavities, fractures, or other discontinuities that could represent an environmental, construction, or storm water management concern.

Comment 4: Karst impact mitigation efforts are superficial due to the limited availability of mapping of karst features and caves.

Response 4: Mitigation requirements and methods will be evaluated and considered during the development of detailed design for the Preferred Alternative in the next engineering phase. The results of all related karst investigations and testing will be evaluated by qualified project geologists, who will then provide specific recommendations to mitigate impacts in karst areas.

Comment 5: Highway construction creates seismic tremors as a result of construction methods and post construction vibrations from trucks. This will lead to fractures and fissures of karst.

Response 5: It is reported in the U. S. Geological Survey Open File Report OF-01-0484 that over seventy percent of the crushed stone produced in the United States comes from carbonate rock quarries and that Illinois is the third leading producer of crushed carbonate rocks, with annual production in excess of 45 million tons. The top 10 states in terms of annual tonnage all contain significant areas of karst. This ongoing annual production volume is direct evidence that effective and widely accepted construction techniques do exist to conduct earthwork operations in areas with karst.

The IDOT will employ the latest accepted construction practices to limit potential construction vibration and will ensure contractor compliance with construction bid specifications that identify the methods and means to limit potential vibrations in the vicinity of the construction site.

Comment 6: Blasting created new joints (fractures) resulting in well pollution at the Terrapin Ridge Motel and the Longhollow Observation Tower; therefore, any construction blasting on this project will have similar effects. Also, there is not enough evidence to support the statement in the EIS that "…blasting operations, if necessary, will be controlled to prevent vibration impacts."

Response 6: The technology of rock blasting is highly developed with techniques that allow blasting in karst areas and which allow great control over vibration. The primary techniques used to control blasting are the determination of proper and precise blast hole depth and diameter, blast hole layout pattern, and the burden or distance from the first blast hole to the open face of rock. When a blast is detonated, the shockwave and gas pressure rapidly expand and diminish in energy as a result of the crushing and blast fracturing of the surrounding rock. The limit of blast fracturing is typically a small multiple of the radius of the explosive cavity. Beyond the blast fracturing zone, the stress induced by the shockwave is less than the elastic limit of the rock and no additional fracturing occurs. Using special techniques, blasting can be designed to reduce the magnitude of vibrations and the range of rock crushing and fracturing such that even greater control is achieved in karst areas.

One of the primary blasting related concerns in karst areas is that blast holes not be drilled directly into or adjacent to subsurface cavities, voids, conduits, etc. There are a number of widely accepted techniques used by blasters in karst areas. Depending on actual conditions, these include drilling blast holes deeper than needed and backfilling to the required depth in order to verify that the hole is not in or over a void, drilling smaller diameter blast holes to reduce the extent of the blast fracture zone, using shallower burdens and closer blast hole spacing to provide more control, detonation of fewer blast holes at a time, and the use of lower energy explosives.

These techniques are used in conjunction with widely recognized limits on ground motion and air concussion which are intended to reduce direct impacts.

There is no direct evidence that wells at either the Terrapin Ridge Motel or the Observation Tower were polluted as a result of blasting operations. Given the blasting techniques typically utilized, it is highly unlikely that pollution occurred as a result of road construction.

Comment 7: Sections A-B & B-F on IDOT's project exhibit map incorporates the highway route from Woodbine through Elizabeth and Galena indicating locations of mines and caves. The overlaid maps indicating lead/zinc mines show that there are many more mines located in these two sections that are within approximately 500 feet of the right-of-way than are exhibited in the EIS. The overlaid mine maps indicate some mines appear to be directly under the highway, and others are right next to and partially under the proposed highway. There are at least 13 to 15 known abandoned mines in section AB and potentially 9 to 12 known mines in section BF.

Response 7: There are no mines wholly or partially under the proposed highway right-of-way. The comment is implying that all of the mines are within 500 feet of the right-of-way. For segment A-B, there are a total of 13 mines close enough to appear on the 1"=500' scale strip mapping and as many as 6 appear to be within 500 feet of the right-of-way. For segment B-F, a total of four mines are close enough to show up on the 500 scale strip mapping of which one is within 500 feet of the proposed right-of-way. The scale of the Bradbury, Reinertsen, and Frankie maps of abandoned mines are too coarse to use for anything but general location.

Comment 8: The Karst Coalition report includes numerous inferences regarding the general proximity of the Selected Alternative to known and unknown abandoned mines in JoDaviess County and suggest that traffic or construction induced vibrations will cause either widespread mine subsidence or groundwater contamination through impacts to abandoned flooded mines. The report also questions how appropriate design and construction techniques or standard geotechnical protocols are applicable.

Response 8: The IDNR Office of Mines and Minerals (OMM) reports that Illinois is one of the largest coal producing states in the nation with nearly one million acres of the state's land area having been undermined for coal since the mid 1800's. The Illinois State Geological Survey (ISGS) reports that coal has been mined in 73 counties in Illinois, and more than 4,500 coal mines have operated since commercial mining began in 1810. While both the OMM and ISGS report that there are as many as 4,500 abandoned coal mines in the state, none are known to exist in JoDaviess or Stephenson Counties. Northwestern Illinois is known for metal mines and the OMM mine location database includes 25 lead and zinc mines in JoDaviess County. There is an important distinction between lead or zinc mining and coal mining in that only a narrow enriched band of material is removed with lead or zinc mining while broad expanses of material are removed in the room and pillar methods of underground coal mining. While there may be statewide issues regarding mine subsidence, these issues are predominantly related to coal mine subsidence.

The 1995 mine subsidence that collapsed a portion of I-70 in Guernsey County Ohio highlights the potential impacts of coal mine subsidence on highways. In the aftermath of this collapse, the FHWA conducted an Abandoned Underground Mine Inventory and Risk Assessment workshop in Ohio where representatives from several federal agencies and numerous mining states, including Illinois, reviewed mine subsidence examples. It was reported at this workshop that "collapse problems on highways as occur in Ohio are not known in Illinois." In JoDaviess County, issues with dissolution of carbonate bedrock are a more significant concern than mine subsidence and have been appropriately considered as part of the EIS process. Such dissolution will be a central consideration in the Phase II (design) effort to minimize the potential for sinkhole development and other impacts along the highway corridor.

It is not appropriate to surmise that vibrations related to highway construction or traffic will result in widespread mine subsidence or be a significant cause of groundwater contamination. Traffic induced vibrations are created by the interaction of heavy vehicles with road surface irregularities such as frost heaves, potholes, cracks, and uneven pavement surfaces and joints. The diversion of heavy vehicle traffic away from local facilities with surface irregularities and onto a new roadway, designed to current standards and well-maintained, will minimize vibrations induced by roadway surface irregularities. In the spring of 2001, the FHWA conducted a case study of vibration levels experienced in Georgetown, Colorado during the reconstruction of the Guanella Pass Road. This controlled testing found "that vibration levels experienced during periods of construction traffic were generally lower than those vibrations commonly generated in this area." While there may be variation depending upon location, the results indicate that effective means do exist to limit vibration from construction traffic.

Comment 9: There are five Superfund mine sites in close proximity to the proposed U.S. Route 20 corridor; these are not addressed in the EIS. An additional EIS should be prepared to evaluate the potential environmental impacts from these superfund sites that may result from the proposed highway construction.

Response 9: The IDOT is aware of three mine sites listed in the USEPA CERCLIS (Superfund) database and is unsure what additional mines are being referred to. The three mine sites are the Little Grant, Inspiration (Eagle-Picher), and Bautsch-Gray mines, which are all located more than one mile from the proposed U.S. Route 20 corridor. Although these mines are listed in the USEPA CERCLIS (Superfund) database, they are not on the National Priority List; nor are they listed as Eligible Response Sites. The proposed roadway will not have any impacts on the three sites.

Comment 10: An additional EIS is needed to evaluate the risks of internal or external factors that may cause another cataclysmic event such as the massive rock failure at the Bautsch-Gray mine.

Response 10: The Bautsch-Gray mine is located in excess of one mile south and west of the proposed U.S. Route 20 corridor. The proposed roadway is in excess of one mile from this mine location or any other known mine, and it is not anticipated that the roadway will have any impact on any known mine locations in the area.

Comment 11: The Buck Hill Range and Blewett Mines along Council Hill Road are eligible for inclusion on the National Register.

Response 11: These mines are located approximately one mile west of the proposed U.S. Route 20 corridor and are significantly closer to existing local streets. The proposed U.S. 20 alignment will not result in any direct impacts to these two mines.

Comment 12: Hundreds of boreholes exist in JoDaviess County from mining exploration. The condition of the boreholes is unknown. Vibration from construction, heavy vehicles, water concentration from diversion, and surface water in open boreholes can cause rock failure and collapse.

Response 12: During Phase II engineering, contract bid documents will be prepared including technical specifications and special provisions. A section on backfilling or sealing geotechnical or exploratory boreholes will be included for all identified boreholes located within the embankment or storm water management areas.

Comment 13: U.S. Route 20 connects directly to I-35 North/South providing access to the North America Superhighway Coalition (NASCO) International Trade Corridor (ITC) serving eleven states with aggregate truck counts of more than 90 million commercial vehicles. That works out to more

than 2.35 million trucks per major ITC segment and the number will only grow. The NASCO data was withheld from the public and citizens were not informed about global trade, freight volumes, and potential pollution from ITC related truck traffic. Traffic data presented in the EIS is insufficient, since it does not incorporate NASCO data related to the ITC.

Response 13: The NASCO data for truck volumes is reported in an aggregate manner for the entire corridor. The U.S. Route 20 traffic forecasting has incorporated all known traffic generation and provides a more localized traffic forecast for the U.S. Route 20 corridor. In addition, the I-35 corridor is approximately 175 miles from the terminus of this project. Dispersal of the truck data from that corridor to this project has been assessed through localized modeling efforts. In summary, significant increases in U.S. Route 20 truck traffic due to NASCO are not expected, nor are they reasonable to assume.

Comment 14: The EIS gives incomplete information on the usage of U.S. Route 20 as part of the National Highway System. The EIS does not account for accelerated freight volumes that will appear on U.S. Route 20 as a result of the Global III Intermodal Terminal in Rochelle, Illinois, the UPS Air Hub facility in Rockford, Centerpoint in Joliet, the Alter Group Business Park in Rochelle and the ethanol plant planned for Rochelle. Freight traffic projected by United States Department of Transportation (USDOT) in Illinois from and through Chicago to both U.S. coasts is gargantuan. U.S. Route 20 is a direct route to Chicago connecting to I-90 in Rockford and with major international trucking hub route I-29 at Sioux City, Iowa.

Response 14: The extent of freight movement in Illinois, and Chicago in particular, is due in large part to the convergence of many major transcontinental rail systems in Chicago and the linkage of all major Midwestern urbanized areas via Interstate highways that cross Illinois or link with the port of Chicago. The Global III Terminal is located along the Union Pacific Railroad mainline into Chicago providing access to numerous airports including O'Hare and Midway. The Bureau of Transportation Statistics *America's Freight Transportation Gateways 2004, Table 2. Top 50 U.S. Freight Gateways, Ranked by Value of Shipments, 2003* shows the Port of Chicago, handling domestic and international air freight within the top 10 ports. The Global III Terminal location will serve a significant volume of freight as it is less than three miles from I-39, which is intersected by I-80, I-88, I-55, I-90, I-74 and I-43 affording north-south and east-west access. Although U. S. Route 20 does provide access to I-90 at Rockford, it is only one of numerous options for routes and modes. The current east-west and north-south interstate highway corridors in Illinois are generally more truck friendly and provide more direct access to major urbanized areas and mid-western retail distribution centers such as those for Target, Wal-Mart, and Home Depot among others than would be afforded by an upgraded U.S. Route 20. All of the projects described in the comment are located within the Chicago metro area or are located along the I-39 corridor and are expected to generate minimal truck traffic along U. S. Route 20 in JoDaviess County.

Comment 15: Interstate 80 is one of the most congested and dangerous roadways in the nation. Heavy-duty diesel truck traffic from I-80 due to proximity will be diverted onto U.S. Route 20. The traffic volumes traveling through the Driftless area in the karst terrain will pollute the countryside and contaminate the water resources.

Response 15: Interstate 80 is a transcontinental east-west corridor that extends between Davenport, Iowa and Gary, Indiana in north/central Illinois. Interstate 80 generally parallels U.S. Route 20 approximately 70 miles to the south. It is not expected that truck traffic will divert from the I-90/I-94 corridor to U.S. Route 20.

Comment 16: By 2020, freight movements will triple; and therefore, so will the projected ADT on U.S. Route 20. Freight flow and its potential impacts should be conveyed to the public before EIS preparation when the project may cause significant environmental impacts.

Response 16: The backup material provided in support of this comment is based on USDOT projections for the country as a whole. There is nothing specific within this material about trade growth on U.S. Route 20 in Galena or relative to trade growth in JoDaviess County as a whole. The backup material contains the *Freight Analysis Framework* for the entire country (a similar publication is available for Illinois only). This is an important distinction because the backup presents freight flow maps for the country which clearly point to significant growth in U.S. port areas and border gateways. However, the *Freight Analysis Framework for Illinois,* which was not included in the backup, contains more readable maps for Illinois. These maps also show that in northwestern Illinois, truck growth will be limited to those areas along the I-88 and I-39 corridors with only minor growth occurring along U.S. Route 20 in JoDaviess County.

Comment 17: There is no noticeable increase in interregional truck traffic on the existing two-lane U.S. Route 20, even though the USDOT has projected flow from 1998 to 2020. Truck traffic on the existing two-lane U.S. Route 20 in JoDaviess County has increased slowly and is between 650 to 1200 daily including light duty trucks.

Response 17: Modest growth in truck traffic was only one of the many reasons for the project as presented in the project Purpose and Need.

Comment 18: The facts regarding high-speed continuity raise questions of safety. Statistically, heavy-duty high-speed truck traffic and hazardous materials create unsafe highways. (*Ref: truck safety statistics, truck rollovers & truck jack-knifing articles; diesel emissions; The National Highway System, "What is the National Highway System?" NHS connectors and the Yucca Mountain Report.)* Making U.S. Route 20 a major arterial for a higher mobility and operational speed will cause many safety concerns according to the diesel truck accident statistics given by FWHA.

Response 18:
The proposed roadway will be designed in accordance with the current geometric design standards. As stated in the FEIS "…most of existing U.S. Route 20 (approximately 73 percent) between Galena and Freeport does not meet IDOT's current design standards for a rural (two lane) highway." The Selected Alternative will provide an inherently safer facility.

Comment 19: Highways create demand for travel and expansion by their very existence.

Response 19: Because of the nature of an access-controlled freeway, future development would tend to be focused near interchange locations. Redistribution of development is more likely than general expansion. See FEIS Section 5.4, Response 1 to Freeway Watch Committee for further discussion. The proposed roadway is planned to accommodate projected traffic volumes that will develop regardless of the proposed development.

Comment 20: Diesel truck traffic 24 hours a day, 7 days a week will cause increased pollution.

Response 20: The Air Quality Technical Report for the project indicates that carbon monoxide will be only marginally above ambient background concentrations along the proposed facility. See FEIS Section 5.4 Response 1 to Northwest Illinois Prairie Enthusiasts and Response 5 to Freeway Watch Committee for further information.

Comment 21: Since trucks manufactured prior to 2006 are exempt, there will be millions of domestic heavy duty diesel trucks that will not be subject to the 2007 regulations.

Response 21: Many dramatic reductions in pollution from on-highway heavy-duty trucks will result from "the Federal 2007 Rule" as well as other provisions of these regulations that went into effect in October 2001. These regulations included stringent emissions regulations governing heavy-duty diesel engines that were manufactured after October 1, 2002 and even more stringent

regulations that are to be phased in between 2007 and 2010. Highway diesel trucks and buses beginning in 2007 will be subject to stringent limits on Particulate Matter (PM), NOx and non-methane hydrocarbons. Currently, highway diesel fuel can contain up to 500 parts per million of sulfur; beginning on September 1, 2006 sulfur content for highway diesel fuel will be capped at 15 parts per million. Since expected service life of on-highway heavy-duty diesel engines is 25 years, nearly complete fleet turnover will occur by 2030. There are currently 11 counties in Illinois that are designated by the EPA as non attainment for PM. As a result, many areas will not be able to sustain fleets with pre-2002 or pre-2007 engines, and captive fleets in particular, such as transit buses and other municipal vehicles, will be retrofitted. To meet the 15 ppm sulfur requirement, refineries will need to remove 97 percent of the sulfur from diesel fuel. In 2007, diesel engines will be required to reduce PM by 90 percent and NOx must be reduced by 95 percent by 2010.

It is important to note that non-highway diesel equipment, such as that used in farming, construction, mining, railroad locomotives, marine engines, and stationary power generators, will have no limitation on sulfur content and only modest requirements for PM and NOx. These requirements are considerably less stringent than those applied to on-highway engines.

Comment 22: There are discrepancies between the EIS and JoDaviess County Economic Development Planning Portfolio on median income, number of people at poverty level, and unemployment rate.

Response 22: The sources used by IDOT in developing this data, as represented in the DEIS and FEIS, included the Illinois Department of Employment Security for resident employment status and the U.S. Census Bureau for income data.

Comment 23: Has a well-defined, well-established, and well-justified purpose for U.S. Route 20 been submitted to the FHWA?

Response 23: The Purpose and Need for Action presented for this project was developed using a process that was in accordance with the Environmental Guidebook of the USDOT FHWA, in particular, those parts relative to "*The Importance of Purpose and Need in Environmental Documents*". The well-defined, established, and justified Purpose and Need for Action presented in the EIS was used to determine which alternatives were reasonable, prudent, and practicable. The Purpose and Need for Action for this project was developed by IDOT in accordance with standard procedures and coordinated with FHWA early in the project.

Comment 24: The archeological record is rich and important in JoDaviess County, and sites are being lost to economic expansion.

Response 24: Regulation of growth is under the jurisdiction of the county and/or municipalities through zoning ordinances and other common land use controls such as land division and subdivision ordinances which entail plat and site plan reviews, etc. Many of the communities within JoDaviess County have limited land use controls and some, such as the villages of Elizabeth and Stockton, have recently been updating comprehensive village plans. Concerns within the county regarding impacts of economic expansion should appropriately be focused on comprehensive planning and implementation of land use controls. Construction of an access controlled freeway could tend to redistribute development along the corridor to interchange locations (where and if allowed) and could thereby reduce the potential for uncontrolled development within communities along the route.

Section 4.3 of the Final EIS discusses how archaeological assessments will be incorporated into the Phase II Design Services work on this project.

Comment 25: There is a lack of data regarding potential for air pollution. Ozone, smog, and fog impacts were not discussed in the Draft EIS. Air pollution will continually increase due to the increase in traffic. Carbon monoxide is the only pollutant named as a vehicle emission. The VOC's and NOx are not mentioned, and PM's are minimally addressed in the Draft EIS.

Response 25: The air quality analyses completed for this project were done so in accordance with NEPA and FHWA guidelines. The two-county region is in attainment for all criteria pollutants. The CO was analyzed as the localized pollutant of concern. The CO is the typical pollutant analyzed in attainment areas, since it is indicative of the trends in transportation pollutant emissions, it is relatively non-reactive, and it can be accurately estimated with models. The findings are presented in the *Air Quality Technical Report* (March 2001).

Comment 26: Ferrocyanide, a compound found in road salt, is classified as one of the cyanides on the toxic pollutant list under section 307a of the Clean Water Act that are listed as hazardous substances under CERCLA.

Response 26: The listing of ferrocyanide (FFC) under 307a has raised questions as to what effect that listing would have on the use of road salt treated with FFC. The EPA made it clear at the time of the listing that they expected no changes in the use of road salt and the Deputy Assistant Administrator in a letter to the Salt Institute dated November 20, 2003 indicated "…my staff have advised me that usual and customary application of road salt containing FFC generally would not be expected to present a threat to public health or welfare or the environment that would warrant a response under the National Contingency Plan."

Comment 27: Harold D. Foster, PhD, Geography, University of Victoria, British Columbia, has indicated that "The geographic data and analyses currently available suggest that road salt may be associated with elevated mortality from cancers of the breast, lung, esophagus, throat, larynx, large intestine, rectum, and bladder."

Response 27: The basis of Professor Foster's paper on road salt is the following logic "…this author explored correlations between USA mortality from 66 cancers and groups of cancers and 219 environmental variables. In "Reducing Cancer Mortality: A Geographical Perspective", he argued that these correlations were suggestive of potential protective effects by soil selenium and calcium and demonstrated elevated cancer mortality in states where soils contained high levels of mercury or where road salt was widely used. Subsequent clinical and/or field trials appear to have proved beyond reasonable doubt that selenium and calcium are protective against a wide variety of cancers. Mercury is a selenium antagonist, reacting with it to form insoluble mercury selenide that does not pass into the food chain. If, as the evidence strongly suggests, selenium is protective against cancer, mercury must promote it. This leaves road salt as the only potential major environmental carcinogen identified by this author for which the evidence is still inconclusive." In Foster's conclusion, he states that the evidence is "still inconclusive."

The Canadian Government conducted a five-year scientific assessment of road salts with and without FFC. This scientific assessment concluded that "Road salts are not dangerous to humans…" and that there is a "…lack of evidence of health effects..." from the use of road salts.

Freeway Watch Committee: The comments on the FEIS received from the Freeway Watch Committee in a letter dated January 22, 2005 are substantially the same as those submitted in response to the DEIS in a letter dated July 16, 2003. These were previously addressed in responses shown on pages 5-8 through 5-12 of the FEIS. After review of the latest comments, it is IDOT's position that the responses provided in the FEIS effectively address the concerns. Additional responses addressing the concerns of the Freeway Watch Committee are included in the ROD under responses to the Karst Coalition Against the Proposed U.S. Route 20 concerns (see especially Responses 1, 2, 19, 23, and 25) and under responses to Private Citizen concerns (see especially Responses 7, 14, 15, and 16).

Private Citizens

Comment 1: The Devil's Ladder Road interchange should be relocated to Tippet Road.

Response 1: The location of each interchange included within the Preferred Alternative was the subject of detailed engineering studies and substantial local involvement. Relocating the Devils Ladder Interchange to Tippet Road would increase the project cost while at the same time increase the overall level of impacts upon environmental resources. One of the principal goals of this project has been the avoidance of impacts to the maximum possible extent. The provision of an interchange at Tippet Road has been studied and found to be inconsistent with this primary project goal.

Comment 2: The existing U.S. Route 20 should be upgraded instead of building a new highway.

Response 2: The construction of a new four-lane facility along the existing U.S. Route 20 corridor was studied and evaluated as part of the EIS process. This alternative was eliminated because it did not meet the project Purpose and Need with regard to capacity and current design standards. In addition, the proximity of historic resources in downtown Galena would be impacted by any proposed widening of the existing roadway. Another sensitive environmental resource that would be impacted by a widening of the existing roadway is the Tapley Woods Land and Water Reserve.

Comment 3: Alternatives should have included a more northerly route such as Route 11 in Wisconsin where the terrain is more level.

Response 3: The stated purpose of the project is the connection of the existing section of U.S. Route 20 west of Illinois Route 84 with a previously approved section of upgraded U.S. Route 20 near Freeport. The study area for the environmental review for this connection covered a significant portion of JoDaviess and Stephenson Counties; this study area was broad enough to ensure a meaningful evaluation of numerous practical alternatives. The connection points to existing upgraded sections of U.S. Route 20 are logical termini. An alignment near Wisconsin Route 11, approximately 14 miles north of existing U.S. Route 20, would not be reasonable with these termini, and in light of the identified project needs.

Other more practical northern alignments were considered throughout the course of this project and were ultimately dismissed due to undesirable resource impacts and failure to address access needs. A far northern Illinois alternative was included in a previous study of the U.S. Route 20 corridor and was dismissed as discussed in the FEIS.

Comment 4: Consideration should have been given to an alignment section that connected the Irish Hollow alternative with section BF south of Tapley Woods to eliminate ridgetop construction and interchanges with existing U.S. Route 20 and Devil's Ladder Road.

Response 4: Several alternates were considered that essentially accomplish what this comment suggests. These alternates tied into sections south of Elizabeth and were located south of Galena Territory and Tapley Woods. The interchanges suggested for elimination are intended to address community access needs consistent with the Purpose and Need for the project.

Comment 5: Not enough attention has been given to a "Super-2" conversion of the existing U.S. Route 20 Corridor.

Response 5: Expressway Alternatives were considered during the development of the DEIS. These alternatives generally followed the existing U.S. Route 20 Corridor and are discussed in greater detail within Section 3 of the DEIS. A "Super-2" conversion involving 2-lanes with at-grade intersections and passing lanes would not meet the project Purpose and Need with regard to

capacity and would very likely result in many safety concerns based on the existing roadway geometry.

Comment 6: Many local residents believe that an improved Route 20, on existing alignment is a safe and cost-effective no-build alternative that should have been considered in detail. Since this alternative was considered and rejected, the EIS fails to meet NEPA requirements.

Response 6: The No-Action Alternative is different than Roadway Improvements to Existing Alignment, which is a Build Alternative. The No-Action Alternative assumes that the road stays in the current configuration with only normal maintenance and repair. This would perpetuate a functionally obsolete facility. The Roadway Improvements to Existing Alignment Alternative was developed and eventually dismissed as discussed in Section 3.2 of the FEIS. The No-Action Alternative was carried forward during the EIS process in an appropriate manner consistent with the requirements of NEPA.

Comment 7: The IDOT was not creative enough in developing the U.S. Route 20 upgrade alternatives, applied design criteria that was too rigid, and refused to seek design waivers. The EIS uses a narrowly drawn Purpose and Need that dismisses alternatives that cannot meet current design standards.

Response 7: There is a Design Exception Process for NHS, routes whereby justified exceptions ("waivers") from controlling criteria may be made. The controlling criteria include such elements as design speed, lane width, shoulder width, line and grade and other standard elements of highway design. Operational elements such as number of lanes or level of service are not criteria subject to design exception for a major capacity project along an NHS route. While some limited design exceptions may be allowed, they are granted within the context of the overall safety and operation of the roadway as well as expectations based on the functional classification of the roadway.

The Roadway Improvements to Existing Alignment Alternative had several fatal flaws. These included ridge top impacts, sensitive environmental resource impacts to the Tapley Woods Land and Water Reserve, impacts to the Galena Historic District, and impacts to clusters of individual historic properties. It was the combination of these impacts, in addition to substantial geometric constraints, that resulted in the rejection of this Build Alternative.

Comment 8: The No-Action Alternative is a useless academic exercise. The NEPA requires inclusion of any planned improvements to the no-action alternative. Since IDOT is not proposing a true no-action alternative, the EIS does not meet NEPA requirements.

Response 8: The NEPA requirement for the No-Action analysis is to reflect the continuation of the present course of action until such time as that action changes. The current course of action is maintenance and spot improvements. There are no course of action changes planned that include corridor wide capacity and safety upgrades.

Comment 9: Build Alternatives will destroy the environment and the natural rural beauty of the area.

Response 9: All reasonable alternatives within the study area were considered and evaluated and a dozen alternatives were subject to detailed engineering studies and environmental evaluations as part of the Draft EIS. Substantial mitigation measures have been proposed to address identified concerns. The IDOT has committed to working with an Advisory Committee during the design phase of the project to incorporate aesthetic features, especially design features that function as a component of the natural landscape.

Comment 10: Of special concern is what impact this project will have on the quality of the Apple River, one of the cleanest and most bio-diverse streams in Illinois.

Response 10: The Illinois Water Quality Report for 2004 lists the Apple River as an impaired stream in non-support of the designated swimming use. This impairment is due to total fecal coliform bacteria from unknown sources. The national non-profit conservation organization known as American Rivers lists the Apple River as one of the most endangered rivers in the United States due to potential fecal coliform pollution from commercial hog farms and the use of hog manure for crop field fertilization within the watershed.

The IDOT has committed within the FEIS to minimizing crossing-related impacts to the Apple River and has also committed to the many conditions and items referenced within section 5 of the FEIS.

Comment 11: Air quality will be impacted by project-related increases in truck traffic.

Response 11: See responses to Comment Key 10 in the FEIS and the above responses to the C&W Research & Consulting Report comments 13 through 17.

Comment 12: The FEIS has not adequately addressed induced socio-economic impacts and therefore does not comply with NEPA requirements. Responses to previous comments by the Freeway Watch Committee on page 5-9 of the FEIS are inadequate.

Response 12: The response presented on page 5-9 of the FEIS and the sections of the DEIS and FEIS referred to are in compliance with the good faith and reasonably foreseeable requirements of NEPA. It is widely believed that transportation improvements make undeveloped or underutilized land more attractive for development. However, there are many overriding and compelling factors that influence the type, magnitude and location of development. These overriding factors include such basics as availability of public or private utilities, the availability and quality of public schools, the character of available land (i.e., steep slopes, wetlands, floodplains, ledges, etc.), the cost of land, and the nature of local development controls. These overriding factors serve to direct where and how development occurs.

Comment 13: The FEIS fails to meet NEPA requirements because it does not address the negative impacts of fine particle emissions on human health and mortality.

Response 13: The entire project area is in attainment for particulate matter. The EIS process has completed all necessary air quality analyses in accordance with NEPA and FHWA guidelines. The DEIS and FEIS demonstrated and documented the particulate matter issues and meet NEPA requirements.

Comment 14: The FEIS fails to meet NEPA requirements because it does not identify the environmentally preferable alternative.

Response 14: Subsection (b) of Title 40 of the Code of Federal Regulations (CFR) Section 1505.2 requires the identification of the alternative or alternatives which were considered to be environmentally preferable within the Record of Decision, not the FEIS. The identification of the environmentally preferable alternative, which is also the Selected Alternative, is contained within this ROD.

Comment 15: In section 5 of the FEIS, IDOT indicated that all consultants involved with the project have signed standard agreements with IDOT. This is insufficient to assure compliance with the consultant disclosure statement requirements of NEPA.

Response 15: Subsection (c) of 40 CFR 1506.5 does require contractors who prepare EIS's to execute a disclosure statement. However, there is no requirement that this be presented within the

EIS. This subsection has been subject to many requests for clarification over the years and as a result the USDOT issued clarification on this requirement found within the FHWA Environmental Guidebook. This memorandum indicates that "When a contractor (and/or subcontractor), in the role of a consultant, prepares studies which the state incorporates into an EIS which the State has taken an active role in preparing, it is not necessary for that contractor to execute the disclosure statement required by subsection 1506.5c."

Comment 16: The FEIS is an incomplete document as it fails to acknowledge opposition to the project.

Response 16: The FEIS notes that at the time of DEIS publication opposition groups had not actively participated in any public meeting or advisory council meeting in a number of years. By including all public comments in the FEIS document, the level of, and reasons for, public opposition is demonstrated. The IDOT has considered, and will continue to consider, the concerns of residents and others with interest in the project area.

6. CONCLUSION

The FHWA has reached its decision based upon information and analysis contained in the FEIS and outlined in this document. Based on these considerations, the FHWA has determined that the Selected Alternative: 1) best satisfies Purpose and Need, 2) poses the least impacts to the natural and human environment, 3) has been selected based on processes in compliance with NEPA and other applicable requirements, and 4) may be advanced through detailed design and construction.

Date: September 22, 2005

Signed: Norman R. Stoner

Norman R. Stoner, P.E.
Division Administrator
Federal Highway Administration