

OFFICE OF THE CITY MANAGER
DES MOINES, IOWA

CITY COUNCIL COMMUNICATION 97-461
SEPTEMBER 22, 1997 AGENDA

SUBJECT:	TYPE:	SUBMITTED BY:
I-235 CONCEPT REVIEW	◆ RESOLUTION ORDINANCE RECEIVE/FILE	HAROLD SMITH CITY ENGINEER

SYNOPSIS —

On August 4, 1997, the City Council received the Metro I-235 Citizens' Design Committee recommendation for the I-235 design concept at the Cottage Grove/Martin Luther King Jr. Parkway and East University Avenue/Easton Boulevard interchanges, and referred it to the City Manager for review and recommendation. City staff has completed a detailed review of the recommended design concepts for the two interchanges. Based on this review, staff supports the design concept for the two interchanges as recommended by the Metro I-235 Citizens' Design Committee, with additional staff recommendations.

FISCAL IMPACT —

Funding for the I-235 reconstruction will be provided by the Iowa Department of Transportation. The current Iowa Department of Transportation estimate includes \$322.3 million for right-of-way and reconstruction of I-235 and \$122.8 million for the west and north system interchanges with I-35/80.

RECOMMENDATION —

It is recommended that the City Council approve the recommendation of the Metro I-235 Citizens' Design Committee and the additional staff recommendations and authorize the City Manager to forward these recommendations to the Des Moines Metropolitan Planning Organization for their concurrence and submittal to the Iowa Department of Transportation to be included in the Final Environmental Impact Statement.

BACKGROUND —

On May 22, 1989, by Roll Call No. 89-2204, the Des Moines City Council adopted a resolution that urged the Iowa Department of Transportation to seek alternatives to the widening of I-235 within the City of Des Moines, such as improved mass transit, car pools, entrance ramp access control, high-occupancy vehicle lanes, and other similar measures. The Iowa Department of Transportation, in conjunction with the Des Moines Area Metropolitan Planning Organization and with the assistance of Wilbur Smith Associates, Engineers - Planners - Economists, undertook an I-235 Alternatives Analysis and prepared a Draft Environmental Impact Statement (EIS) to accomplish the requests of the City Council.

The I-235 Alternatives Analysis considered in detail approximately 20 transportation alternatives for the potential of reducing the need for a full-scale expansion of I-235 as was proposed in 1989. The process to analyze the alternatives involved a four-step screening process and resulted in two alternatives, or combination of alternatives, being carried forward to the Draft EIS for comparison with the 1989 widening proposal.

The Draft EIS was completed and submitted for review and comment by the local jurisdictions in 1995. City staff conducted a series of meetings with neighborhood groups, business groups, and public meetings in each of the four wards. Based on the input from these meetings, staff prepared a recommendation regarding the Draft EIS. This recommendation identified the need for additional design work to provide a preferred concept for the Martin Luther King Jr. Parkway/Cottage Grove interchange and the East University Avenue/Easton Boulevard interchange.

On August 7, 1995, by Roll Call No. 95-3023, the City Council approved the staff recommendation on the Draft EIS and forwarded it to the Metropolitan Planning Organization (MPO). On August 17, 1995, the MPO concurred with the City of Des Moines and City of West Des Moines respective City Council actions and unanimously approved a recommendation for a limited-build type preferred alternative for the I-235 corridor. The MPO also recommended that the Iowa Department of Transportation (IDOT) create a citizens' advisory committee to work with the I-235 project manager.

On January 9, 1996, the IDOT Commission approved the concept for the improvement of I-235 through the Des Moines Metropolitan Area. Based on recommendations made by the Des Moines MPO, the IDOT created an I-235 citizens' advisory committee to assist the I-235 project manager concerning the design improvements for I-235. This committee, the Metro I-235 Citizens' Design Committee (MICDC), was formed in March 1996. The MICDC is composed of citizen leaders representing each of the affected local jurisdictions. The MICDC has worked with the IDOT staff and its consultant to evaluate several design options, as described below and as shown on the attached IDOT exhibits:

- **Cottage Grove/Martin Luther King Jr. Parkway Interchange** - The Commission-approved alternative for this interchange included a "fly-over" ramp that provided a direct connection for northbound Martin Luther King Jr. Parkway traffic to westbound I-235. Based on input from several area neighborhood leaders, this ramp would create an aesthetically unpleasant impact that would serve to divide their neighborhood.

To help minimize the aesthetic impact, several design options were investigated. The final preferred alternative eliminates the direct "fly-over" ramp and instead takes traffic northbound on Nineteenth Street through signalized intersections at Cottage Grove and at School Street, then over I-235 to an unrestricted left-turn onto the westbound I-235 entrance ramp. This configuration would be similar to the existing configuration for northbound Second Avenue traffic to the westbound I-235 entrance ramp. Southbound Martin Luther King Jr. Parkway would be relocated approximately one-half block farther west to allow the heavy traffic movement on the entrance ramp to pass under the bridge over I-235, rather than have to cross the southbound traffic at a signalized intersection. The relocation of Martin Luther King Jr. Parkway will require four additional residential properties.

The eastbound I-235 exit ramp will be relocated farther north so it passes under the Cottage Grove bridge over I-235, then connects with Martin Luther King Jr. Parkway at a signalized intersection at School Street. The eastbound I-235 entrance ramp and the westbound exit ramp would be similar to their present configuration.

In addition, Cottage Grove will be reconstructed as a single three-lane roadway across I-235, with no entrance or exit ramp connections. Along with reduced traffic volumes resulting from eliminating the existing ramp connection, Cottage Grove will include pedestrian and bicycle features across I-235 that will greatly improve the connection between the Drake Park and Sherman Hill Neighborhoods.

In spite of its negative aesthetic impacts, the "fly-over" ramp configuration of the original design concept provided a high level of service and minimized traffic on Nineteenth Street and on Martin Luther King Jr. Parkway through the intersections with Cottage Grove and School Street. The final

preferred alternative will include a series of six signalized intersections in this interchange area: on Martin Luther King Jr. Parkway and on Nineteenth Street at Cottage Grove; School Street (south ramp connections) and Day Street (north ramp connections). Wilbur Smith Associates has conducted a detailed analysis of these closely-spaced intersections using the MPO's 2020 design year projected traffic volumes, and has determined that a properly coordinated traffic signal system can operate with an acceptable capacity and level of service.

- **East University Avenue/Easton Boulevard Interchange** - Design issues at the East University Avenue/Easton Boulevard interchange area included providing direct access across I-235 for Easton Boulevard, improving the access from westbound East University Avenue to northbound I-235, maintaining the existing eastbound exit ramp to Easton Boulevard, as well as investigating ways to reduce traffic problems along East University Avenue at East Twenty-first Street and Avenue F. M. Hubbell.

Several design options were evaluated to address the above issues and concerns from the original design concept. For the section of I-235 north of Easton Boulevard, the original concept included the acquisition of the homes along the west side of Tichenor Street. Removal of these homes allowed the mainline of I-235 to be shifted farther west and stage-constructed to a higher elevation that could go over Easton Boulevard. By constructing I-235 with a bridge over Easton Boulevard, Easton would be reconnected east and west under the freeway.

By shifting mainline I-235 north and west, and by reducing the East Fifteenth Street eastbound entrance ramp from two lanes to one lane, there is adequate room to provide the eastbound exit ramp to Easton Boulevard and only displace two homes and one business. The IDOT had estimated that it would require 22 homes and one business to provide the eastbound exit ramp to Easton Boulevard in the original design.

The final design modification also resulted from the shifting of the I-235 mainline farther west. Because of the proximity of the cemetery at the intersection of Easton and Delaware, it is not feasible to provide a southbound exit ramp to Easton Boulevard. Instead, a southbound exit ramp is provided directly to East University Avenue. This exit ramp does not currently exist. The westbound East University Avenue entrance ramp to westbound I-235 would be changed to a right-hand entrance that goes under I-235, then crosses over East University Avenue and the East Fifteenth Street exit ramp. The eastbound I-235 exit ramp would be "braided" under the East Fifteenth Street entrance ramp, and then connect to East University Avenue similar to its current connection.

STAFF REVIEW

On August 4, 1997 the City Council received the MICDC recommendation for the design concept for the Cottage Grove/Martin Luther King Jr. Parkway and East University Avenue/Easton Boulevard interchanges, and referred it to the City Manager for review and recommendation. City staff has completed a detailed review of the recommended design concepts for the two interchanges.

At the Cottage Grove/Martin Luther King Jr. Parkway interchange, the design does not provide a direct connection for the heavy traffic movements from Martin Luther King Jr. Parkway to the south and I-235 to the west. These traffic movements will instead be provided through at-grade signalized intersections, which will provide a lower level of service and additional congestion. However, the design is compatible with the current design concept for Martin Luther King Jr. Parkway, which includes a series of signalized intersections, and the analysis shows that a properly coordinated signal system can provide adequate capacity and level of service. In addition, the revised configuration of Cottage Grove, including bicycle and pedestrian features, will substantially improve the connection between the Drake Park and Sherman Hill Neighborhoods.

At the East University Avenue/Easton Boulevard interchange, the proposed design accomplishes the major design goals of providing a direct connection across I-235 for Easton Boulevard and maintaining the existing eastbound exit ramp to East University Avenue. The connection of Easton Boulevard under I-235 improves access from East University Avenue to northbound I-235, and reduces traffic problems along East University Avenue at East Twenty-first Street and Avenue F. M. Hubbell. Traffic from East University Avenue will be able to turn north on East Twenty-first Street to Easton Boulevard, then east on Easton Boulevard under I-235 to the entrance ramp to northbound I-235. The connection of Easton Boulevard under I-235 will reduce the amount of traffic that is forced to travel through East University Avenue at East Twenty-first Street and Avenue F. M. Hubbell, which will reduce the level of congestion at these intersections. In addition, the "braided" East University Avenue and East Fifteenth Street entrance and exit ramps will eliminate the existing weaving problems and simplify the signing for the motorists.

Based on the above analysis, staff supports the design concept for the Cottage Grove/Martin Luther King Jr. Parkway and East University Avenue/Easton Boulevard interchanges as recommended by the MICDC, with the following additional recommendations:

1. The northbound Nineteenth Street bridge over I-235 should provide four lanes of traffic, with a left-turn only lane, combination left-turn/through lane, and two through lanes to assure adequate capacity for the heavy movement to westbound I-235.
2. The design of the interchange at Cottage Grove/Martin Luther King Jr. Parkway should include a coordinated traffic signal system, including video surveillance with one or more cameras, connected to the City of Des Moines' traffic operations center being constructed as part of the Downtown Signal System.
3. In general, entrance ramps at both interchanges should be designed for two-lane width at the intersecting street to provide improved capacity and intersection operations, and then merge to a single lane before entering the freeway.
4. The City should consider a possible future southbound exit ramp for Easton Boulevard to be included with any redevelopment of the Delaware Avenue industrial area. This exit ramp could be provided by connecting to Delaware Avenue, then south on Delaware Avenue to Easton Boulevard and on East Twenty-first Street to East University Avenue.