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I-696 NOISE PREDICTIONS

The noise predictions of Tables 3 and 4 are for the locations specified in Table 1, and are based on the conditions given below, and the distance of Table 2.

- a. Dual 4-lane pavement with 26 ft median.
- b. At grade.
- c. Observer height of 5 ft.
- d. No grade or shielding corrections.
- e. Infinite roadway length.
- f. Free flow traffic.
- g. Traffic level of service C vehicle speed, 55 mph.
- h. Peak volume directional traffic speed, 30 mph.
- i. Low volume directional traffic speed, 50 mph.
- j. Traffic volumes as in November 28, 1972 memo, N. Farnum to C. Carroll.

TABLE 1

I-696 SELECTED NOISE SENSITIVE AREAS

| <u>Site #</u> | <u>Description</u> | <u>Stationing</u> |
|---------------|---|-------------------|
| 1 | Knob in the Woods Apartments | 47 |
| 2 | Alice M. Birney Jr. High School | 58 |
| 3 | Glenn Schenhals School Area | 158 |
| 4 | Fontaine Garden Apartments | 193 |
| 5 | Jewish Community Center & United Hebrew School | 207 |
| 6 | Temple Emanu-El & School | 215 |
| 7 | Victoria Park | 221 |
| 8 | Congregation Bnai Moshe | 222 |
| 9 | Huntington Woods Manor Subdivision | 263 |
| 10 | Rackham Municipal Golf Course | 280 |
| 11 | Detroit Zoological Park | 312 |
| 12 | Pleasant Ridge Recreation Area | 333 |
| 13 | Church of the Nazarene | 387 |
| 14 | Harding Park | 395 |

TABLE 2

DISTANCES USED IN I-696 NOISE PREDICTIONS

| <u>Site #</u> | <u>Observer to Center of Near Lane DN(ft)</u> |
|---------------|---|
| 1 | 100 |
| 2 | 125 |
| 3 | 100 |
| 4 | 75 |
| 5 | 100 |
| 6 | 175 |
| 7 | 100 |
| 8 | 150 |
| 9 | 100 |
| 10 | 100 |
| 11 | 125 |
| 12 | 110 |
| 13 | 160 |
| 14 | 300 |

TABLE 3

NOISE PREDICTIONS FOR THE YEAR 1982 FOR PROPOSED I-696

(All values are L_{10} dbA)

| Site # | 2-1/2% Commercial | | | | | | 5% Commercial | | | | | |
|--------|-------------------|---------|-------------------|---------|------------------|-------|-------------------|-------|------------------|----|-------------------|----|
| | Concrete Surface | | Bit. Cap. Surface | | Concrete Surface | | Bit. Cap. Surface | | Concrete Surface | | Bit. Cap. Surface | |
| | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM |
| 1 | 74.5*,t | 76.9* | 69.5t | 71.9* | 78.7* | 79.5* | 73.7* | 74.5* | | | | |
| 2 | 75.3* | 73.0*,t | 70.3* | 68.0t | 78.0* | 76.8* | 73.0* | 71.8* | | | | |
| 3 | 75.9*,t | 77.5* | 70.9*,t | 72.5* | 79.4* | 80.2* | 74.4* | 75.2* | | | | |
| 4 | 79.6*,t | 81.0* | 72.6*,t | 76.0* | 81.5* | 83.1* | 76.5* | 78.1* | | | | |
| 5 | 76.3*,t | 78.8* | 71.3*,t | 73.8* | 79.7* | 81.1* | 74.7* | 76.1* | | | | |
| 6 | 74.1* | 75.0* | 69.1 | 70.0 | 76.3* | 77.2* | 71.3* | 72.2* | | | | |
| 7 | 79.1* | 76.1*,t | 74.1* | 71.1*,t | 81.3* | 79.7* | 76.3* | 74.7* | | | | |
| 8 | 75.1* | 76.0* | 70.1* | 75.0* | 77.2* | 78.2* | 72.2* | 73.2* | | | | |
| 9 | 79.3* | 76.2*,t | 74.3* | 71.2*,t | 81.4* | 79.8* | 76.4* | 74.8* | | | | |
| 10 | 79.3* | 76.2* | 74.3* | 71.2* | 81.4* | 79.8* | 76.4* | 74.8* | | | | |
| 11 | 77.7* | 76.3* | 72.7* | 71.3* | 79.8* | 78.4* | 74.8* | 73.4* | | | | |
| 12 | 75.9*,t | 78.3* | 70.9*,t | 73.3* | 79.3* | 80.5* | 74.3* | 75.5* | | | | |
| 13 | 75.2* | 76.1* | 70.2* | 71.1* | 77.3* | 78.3* | 72.3* | 73.3* | | | | |
| 14 | 71.1* | 71.8* | 66.1 | 66.8 | 73.4* | 74.0* | 68.4* | 69.0 | | | | |

* - above 70 dbA limit of PPM 90-2 standard-needs further correction.

t - low commercial volume is off the truck noise prediction graph therefore all trucks converted to equivalent cars (15 cars/truck)

TABLE 4

NOISE PREDICTIONS FOR THE YEAR 2000 FOR PROPOSED I-696
(All values are L_{10} dbA)

| Site | 2-1/2% Commercial | | | | 5% Commercial | | | |
|------|-------------------|---------|------------------|---------|------------------|-------|-------------------|-------|
| | Concrete Surface | | Bit. Cap Surface | | Concrete Surface | | Bit. Cap. Surface | |
| | AM | PM | AM | PM | AM | PM | AM | PM |
| 1 | 78.9* | 79.6* | 73.9* | 74.6* | 81.0* | 81.7* | 76.0* | 76.7* |
| 2 | 78.3* | 77.3* | 73.3* | 72.3* | 80.4* | 79.4* | 75.4* | 74.4* |
| 3 | 78.5* | 79.8* | 73.5* | 74.8* | 80.6* | 81.9* | 75.6* | 76.9* |
| 4 | 78.2*,t | 81.7* | 73.2*,t | 76.7* | 82.2* | 83.8* | 76.2* | 75.8* |
| 5 | 76.8*,t | 79.7* | 71.8*,t | 74.7* | 80.3* | 81.8* | 75.3* | 76.8* |
| 6 | 74.8* | 75.8* | 69.8 | 70.8* | 77.0* | 77.9* | 72.0* | 72.9* |
| 7 | 79.7* | 76.8*,t | 74.7* | 71.8*,t | 81.8* | 80.4* | 76.8* | 75.4* |
| 8 | 75.7* | 76.9* | 70.0* | 71.9* | 77.9* | 79.0* | 72.9* | 74.0* |
| 9 | 79.7* | 78.5* | 74.7* | 73.5* | 81.8* | 80.6* | 76.8* | 75.6* |
| 10 | 79.7* | 78.5* | 74.7* | 73.5* | 81.8* | 80.6* | 76.8* | 75.6* |
| 11 | 78.2* | 77.1* | 73.2* | 72.1* | 80.3* | 79.2* | 75.3* | 74.2* |
| 12 | 77.8* | 79.1* | 72.8* | 74.1* | 80.0* | 81.2* | 75.0* | 76.2* |
| 13 | 75.5* | 76.5* | 70.5* | 71.5* | 77.7* | 78.7* | 72.7* | 73.7* |
| 14 | 71.5* | 72.2* | 66.5* | 67.2 | 73.8* | 74.5* | 68.8 | 69.5 |

* - above 70 dbA limit of PPM 90-2 standard - needs further correction.

t - low commercial volume is off the truck noise prediction graph, therefore all trucks converted to equivalent cars (15 cars/truck)