TESTIMONY OF JOE MEHRA, P.E.
TRAFFIC CONSULTANT, MCV
IN OPPOSITION
TO FIELD SCHOOL APPLICATION

I am Joe Mehra, President of MCV Associates, Inc. I have over 25 years of experience in traffic engineering and transportation planning. I was the co-author of the first ever handbook on Site Impact Traffic Evaluation that was prepared for the U.S. Department of Transportation. I will present a review and critique of the Gorove/Slade Traffic Report dated June 2, 2000 followed by the results of my traffic analysis.

Comments on Gorove/Slade Reports Dated June 2, 2000.

Existing Data - The turning movement counts used are over one year old. These counts were not adjusted to make them current, as recommended by the traffic engineering profession. Further, the traffic counts on Foxhall Road, during the afternoon peak hour, show significant differences at W Street and Whitehaven Parkway (See Figure 3, page 6). 548 vehicles leave Whitehaven Parkway between 2 and 3 PM on May 19, 1999 and only 458 reach W Street during the same time period. There are no major traffic generators between W street and Whitehaven Parkway to cause a 20 percent difference.

The selection of the PM peak hour between the hours of 2:00 PM to 4:00 PM is wrong. The Institute of Transportation Engineers Recommended Practice for Traffic Access and Impact Studies for Site Development notes "The time period(s) that provide the highest cumulative directional traffic demands should be used to assess the impact of site traffic on the adjacent street system and to define the roadway configurations and traffic control measure changes needed in the study area". The selection of the 2:00 PM to 3:00 PM time period by Gorove/Slade results in 30% less traffic than the later peak hour (5:00 to 6:00 PM). Thus, the Recommended Practice for traffic impact studies is not being followed.

Field School Trip Generation - The Gorove/Slade Report does not show the trips or trip rates for the existing school site. It does mention that 36 percent (76 students) use public transportation (the school is served by Metrobus and Metrorail -- within walking distance). The study assumes that the number of students using public transit/shuttle at Foxhall Road will be 145, although the school site is not served by Metrobus or Metrorail. This is contrary to research on transit use. Research has shown that an increase in travel time or an increase in wait times or an additional shift in modes (from bus or rail to school shuttle bus) will result in a decrease in transit use.

Case No. 16559
Exhibit No. 461
Board of Zoning Adjustment
District of Columbia
CASE NO.16559
EXHIBIT NO.461

Future Traffic Volumes - The future traffic volumes consist of the existing traffic volumes, the normal growth in through traffic volumes, the traffic from other developments and the traffic from the proposed school. The Gorove/Slade Report has not grown the traffic that was counted in March/April 1999 to the future year, has not shown the traffic from the recently approved George Washington Mount Vernon College and the Spanish Ambassador's complex. The total future traffic volumes are therefore incorrect.

Total Future Levels of Service - Data in Figure 6 was used to estimate the total future levels of service. The traffic volumes are incorrect as described in the above sections. Therefore, the levels of service are also incorrect. Other than the traffic volumes, the levels of service estimation also utilize the peak hour factors. Gorove/Slade Report has not used the peak hour factors that were computed based on data collected on Foxhall Road and included in their Appendix. Gorove/Slade Report has used peak hour factor (phf) of 1.0 in existing conditions for two intersections. The use of 1.0 as phf, rather than the factor based on data collected on Foxhall Road, makes the levels of service appear better than the actual levels.

Queuing at School Entrance - The Appendix to the report presents the queue lengths at the school entrance using Webster's Formula. The application of this formula by Gorove/Slade assumed that the school traffic will be spread evenly during the 7:45 to 8:45 AM hour. However, since school starts at 8:00 and 8:20 AM, very few, if any vehicles will arrive after 8:20 AM. Gorove/Slade also assumed that no trucks or buses will turn in to or out of the school during the AM and PM peak hours. Due to these erroneous assumptions, the estimation of queue lengths are wrong.

Conclusion - Due to the major errors in the use of the existing traffic data, the traffic analysis including the levels of service are not valid. The Gorove/Slade Report conclusion that all of the studied intersections along Foxhall Road are projected to operate at acceptable levels of service during the AM and PM peak hours is **NOT VALID.**

MCV TRAFFIC ANALYSIS

New Traffic Data Collection - MCV collected new traffic counts in February of this year at the three intersections of Foxhall Road/Whitehaven Parkway, Foxhall Road/W Street and Foxhall Road/Garfield Street during the hours of 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM. The intersection of Foxhall Road/Garfield Street is signalized and the other two intersections are unsignalized.

Levels of Service Analysis - The Highway Capacity Software was used to estimate

the levels of service using field measured peak hour factors. The levels of service are similar to school grades. LOS A is the best and LOS E and LOS F are unacceptable levels of service. The results show that the eastbound approach at Foxhall Road/Whitehaven Parkway is currently operating at LOS E or F during the AM and PM peak hours. The eastbound and westbound approaches at the intersection of Foxhall Road/W Street are currently operating at LOS E or F during the AM and PM peak hours. The southbound and westbound approaches at the intersection of Foxhall Road/Garfield Street are currently operating at LOS F during the AM peak hour.

Future Traffic - Future traffic includes existing traffic, normal expected growth in commuter traffic for one year and increased traffic resulting from the GW/Mt. Vernon Campus Expansion, the Spanish Ambassador's Complex and the Field School itself.

Field School Trip Generation - Based on existing Field School use of public transportation (36%) at its current Kalorama location which is a one-step process (walking distance to bus and metro), I have assumed that no more than 25% of the student population will use a multi-step process — students are driven to a metro or bus stop, wait for public transportation, reach the shuttle bus destination, wait for the shuttle bus and then are shuttled to the school. I estimate that this multi-step process will add 20 minutes commute time to student's existing commute time, which will lead to more, not less, private vehicles on Foxhall Road. The current student occupancy at the Field School is 1.2. I have assumed no more than 1.5 students per car based on new driving laws.

Level of Service for Future Conditions - The level of service was estimated using Highway Capacity Software. It was assumed that the intersection of Foxhall Road/Whitehaven Parkway will be signalized but not at Foxhall Road/W Street (since Field School and DPW agree that no light should be installed here). The levels of service analysis shows a LOS C at the intersection of Foxhall Road/Whitehaven Parkway during the AM and PM peak hours, however, the northbound left turns will operate at LOS F during the AM peak hour. The eastbound and westbound approaches at the intersection of Foxhall Road/W Street are projected to operate at LOS F during the AM and PM peak hours. The intersection of Foxhall Road/Garfield Street is projected to operate at LOS F during the AM and PM peak hours.

Conclusion - The traffic analysis shows that the existing traffic levels of service on Foxhall Road are bad and will be made worse with the addition of the Field School.

JAWAHAR (JOE) MEHRA, P.E.

President, MCV Associates, Inc.

Education

- State University of New York, Buffalo, M.S. Industrial Engineering/Operations Research, 1972
- Indian Institute of Technology, Bombay, India, B.S. Mechanical Engineering, 1969

Previous Positions

- Callow Associates, Inc., Principal, 1988 - 1990
- Kellerco, Inc., Vice President, 1982 - 1988
- BKI Associates, Inc., Senior Transportation Engineer, 1978 - 1982
- Alan M. Voorhees and Associates, Associate Engineer, 1970 - 1978

Experience

He has over twenty five years experience in the areas of traffic engineering and transportation planning. He has managed several traffic engineering/operations studies in Maryland including traffic analysis, impact studies, accident analysis and data collection. He has extensive experience with SHA standards and procedures having participated in several SHA contracts and related studies.

- Traffic Analysis. He has managed several traffic engineering studies in Maryland using SHA approved procedures including the Georgetown Branch Transitway MIS/DEIS for MTA (traffic forecasts, traffic impact, capacity/levels of service, queue jumper analysis) , the Route 28 Corridor in Montgomery County (existing conditions, traffic forecasts, capacity/levels of service, geometric improvements, conceptual plans), Post Office Road Study in Charles County, MD (data collection, capacity/levels of service, traffic forecasts, signal design, pavement marking, signing), Suitland Parkway Study (Prince George's County MD), etc. He has conducted numerous traffic impact studies in Maryland using SHA format. All these studies were reviewed and approved by SHA. Some of these studies include the Villages of Piscataway Study (1000 acres), The Clinton/Townshend Property (800 acres), Expansion of Clinton Plaza, The Shady grove Life Sciences Center Traffic Study, The Heards Estates Traffic Study in St. Mary's County, College Park TDOZ, Waters Landing Corporate Park in Germantown, Milestone Property in Germantown, MD, etc. He is the Project Manager on two traffic engineering retainers -- with Montgomery County and Prince George's County. These studies include traffic analysis, signal design, data collection, capacity/levels of service, TCPs, etc. Other traffic engineering studies that he has managed include the Route 58 Traffic Engineering Study, Route 123 Corridor study in Fairfax City, TOPICS study for Buffalo, New York; TSM study for East End of Pittsburgh, Pennsylvania; etc.
- Traffic Signal Design/Operations. Most of the studies related to traffic signal design were prepared using SHA standards and specifications and include Middlebrook Road, Post Office Road and currently preparing as-built signal plans for twenty intersections in Montgomery County using SHA standards. He has managed the Route 30 corridor study that included the TRANSYT-7F analysis for the signal system study and timing development for 11 signals and the NETSIM analysis for the Springfield Mall subarea to conduct queuing and timing analysis.
- Traffic Control Plans. He has managed the preparation of traffic control plans for 46th Avenue Reconstruction in the Town of Edmonston (MD), TCP for Boyds Road in Calvert County, etc.
- Traffic Data Collection/Analysis. He has managed eight contracts to conduct various types of traffic data collection activities for SHA. Mr. Mehra is the Project Manager for SHA Contract BCS 97-02 to conduct portable machine counts for Maryland.

Professional Affiliations

- Fellow, Institute of Transportation Engineers, Chairman, ITE Technical Council Committee 6A35, "Use of Transportation Planning Models to Monitor and Review Growth Impacts"; Member TRB

Mehra, Continued

Publications

"People Mover System for New Towns/Communities" Presented at the Second International Conference on Automated People Movers (APM's) in Miami, Florida, March, 1989.

"The Public Presentation of Traffic Impacts: Strategies and Procedures", presented at the Development Impact Analysis Conference, Washington, D.C., May, 1986.

"Site Impact Traffic Evaluation Handbook", co-authored with C.R. Keller. Prepared for Federal Highway Administration, January, 1985.

"Development and Application of Trip Generation Rates", co-authored with C.R. Keller. Prepared for Federal Highway Administration, January, 1985.

"Crisis Relocation Movement Plan for the Tidewater Risk-Host Conglomerate", co-authored with D. Takacs and C.R. Keller. Prepared for presentation at the TRB meeting in January, 1984.

"A Cost-Effectiveness Model for the Analysis of Trade-Offs of Stationary Vs. Transportation Emissions Control in Baltimore", co-authored with A. Lago et al. Presented at the TRB Meeting in January, 1984.

"Study of Alternative Methodologies for Apportionment of Air Quality Control Requirements", co-authored with K. Hollenbeck et al. U.S. DOT, February, 1983.

"Study of the Cost-Effectiveness of Stationary Source, Mobile Source and Transportation Controls to Improve Air Quality", co-authored with S. Bellomo. U.S. DOT, November, 1981.

"Traffic Problems in the Bombay CBD." Presented at the ASCE International Conference in New York, held in May, 1981.

"Energy Impacts of Transportation: Some Relationships and Results", Prepared for presentation at the ASCE Portland Convention Energy Considerations in Transportation, 1980.

"Stationary and Mobile Source Controls and Trade-Offs". Prepared for presentation at the ASCE Speciality Conference Transportation and 1977 Clean Air Act Amendment, San Francisco, November, 1979.

"Evaluating Options in Statewide Transportation Planning/Programming Techniques and Applications;" co-authored with S. Bellomo, et al. NCHRP Report 199, March, 1979.

"Fuel Consumption and Emissions as Related to Vehicle Operations and Highway Design;" co-authored with P. Brach. Presented at the ASCE Speciality Conference on Energy Conversation, May, 1978.

"An Overview of a Methodology to Determine Fuel Consumption and Emissions as a Function of Traffic Operations and Road Geometry", co-authored with P. Brach. Presented at TRB Meeting, January, 1978.

Mehra, Continued

"Evaluation and Application of Priority Programming Methodologies in Maryland", co-authored with M. Stein, J. Cichy and S. Bellomo. TRR 610, 1979.

"Evaluating Options in Statewide Transportation Planning/Programming. Issues Techniques, and Their Relationships", co-authored with S. Bellomo, et al. NCHRP Report 179, 1977.

"Analysis of Weekend Travel", co-authored with S. Bellomo. Prepared for presentation to the Committee on Statewide Transportation of the Transportation Research Board, Washington, D.C., 1975.

"Statewide Travel Forecasting Procedures, Including Activity, Allocation and Weekend Travel - Phase II Weekend Travel Mode", co-authored with S. Bellomo, U.S. DOT, Federal Highway Administration, Washington, D.C., 1974.

"Statewide Travel Forecasting Procedures, Including Activity Allocation and Weekend Travel - Phase II Statewide Activity Allocation Model", co-authored with C. Schlappi and S. Bellomo. U.S. DOT, Federal Highway Administration, Washington, D.C., 1974.

"Simplified Statewide Travel Forecasting Procedures, Including Supply-Demand Relationships", co-authored with A. Lemer et al. U.S. DOT, Federal Highway Administration, Washington, D. C., 1973.