to mechanical and safety constraints rather than flotilla size, and that if minimizing delays is an objective of bridge lift operations, minimum flotilla sizes should be considered when regulating these openings

Data analysis for the 11 bridge sites showed that average weekday boat runs resulted in a total of 2,024 person-hours of delay, while weekend boat runs caused an average of 1,034 person-hours of delay. Data from the 11 study sites were extrapolated to estimate boat run delays at all of the 25 downtown bridge based on historic vehicle and pedestrian traffic data provided by the Chicago Department of Transportation (DOT) and the Illinois DOT. Based upon these extrapolations, it was estimated that average weekday boat runs would generate 2,724 person-hours of delay and weekend runs would produce 1,260 person-hours of delay. In summary, the person-hours of delay attributable to weekend bridge openings were found to be less than half of those caused by weekday openings.

The consultant also expressed findings of traffic delay in terms of the average number of persons and vehicles affected by bridge openings that accommodated the passage of an average-sized flotilla. On-site monitoring of the Spring, 1995 Breakout boat runs found that an average weekday flotilla included 7 boats and that bridges took an average of 8 minutes to open and close and 4 minutes for ground-based traffic to recover (12 total minutes of delay). Using the number of vehicles, vehicle occupants, and pedestrians as metrics, the consultant estimated that a weekday boat run of 7 boats caused a 12-minute delay for an average of 13,620 people and 5,360 vehicles. A similar quantification of impacts for people and vehicles was calculated based on weekend boat runs that averaged 12 boats per flotilla. An average weekend boat run of 12 vessels produced 12minute delays for 6,300 people and 3,540 vehicles.

C. Impacts on Emergency Services

At the request of the City of Chicago, the traffic study also documented instances where emergency vehicles were delayed by bridge openings. The City has historically voiced its concern that bridge openings compromise police, fire department, and ambulance services by impeding their response to emergency calls and by delaying their return to their bases of operation. Delays by emergency response vehicles were documented in the traffic study by the notes of on-site traffic monitors, in Mobile Intensive Care Unit Report logs

maintained by the Chicago Fire Department, and in the Bridge Lift Logs of the Chicago DOT. The traffic study found that 83 percent of the weekday boat runs were associated with the delay of at least one emergency vehicle, and similar delays were recorded for 26 percent of the weekend runs.

D. Study Findings Relevant to Final

The traffic analysis for downtown Chicago found consistent patterns of normal vehicle and pedestrian movement (i.e., no special events) that were directly attributable to factors of time of day and days of the week. Outlined below are the major factors that were considered in formulating the final rule. The following conclusions of the study are shown with a list of the relevant study findings.

(a) If traffic impacts and their consequent delays are to be minimized, maximum opportunity should be afforded to schedule boat runs on weekends and evenings rather than during weekday daylight hours.

(1) Pedestrian and vehicle traffic volumes on weekdays were approximately double those recorded on weekends.

(2) Weekday evening traffic volumes on most downtown streets fall to levels that are at or below those which are experienced on weekend mornings.

(b) If boat runs are to be made on weekdays, the runs should be scheduled during times when bridge lifts would generate the least amount of vehicular and pedestrian traffic delay.

- (1) Weekday vehicle traffic volumes on commuter routes (e.g., Lakeshore Drive) peak sharply during morning and evening rush hours (i.e., 7:00–10:00 a.m. and 4:00–7:00 p.m) and return to more moderate volumes during off-peak hours.
- (2) Other streets in the study sample had weekday traffic volumes that remained fairly consistent throughout the day, declining only slightly from morning/evening peak periods.
- (3) Pedestrians experienced 22 percent of the total person-hours of delay associated with weekday daytime boat runs and 11 percent of the total person-hours of delay created by weekend boat runs.
- (c) If a future schedule for boat runs is to reflect recent patterns of boaters' requests for transit, at least some opportunity should be afforded for periodic weekday daytime and evening
- (1) For boat runs monitored during the study period, 92 of 359 boats (25 percent) made runs on weekdays/ evenings.

- (d) If provisions for weekday daylight boat runs are to be sensitive to the impacts of bridge lifts on traffic delays, requirements for minimum flotilla size should be considered.
- (1) The time needed to carry out the mechanical process and safety precautions during bridge lifts exceeds that which is usually required for the transit of boats in Chicago.

(2) Bridge lifts to accommodate flotillas of up to 5 boats produced delays only 15 percent greater than those generated by single-boat passages.

(3) Of the eleven weekday daylight runs that were monitored during the study, two runs accommodated only one boat and two others accommodated two and three boats, respectively.

(e) Bridge lifts to accommodate boat runs do impact emergency vehicles, with far greater impacts associated with weekday daytime boat runs than with weekend runs.

(1) At least one emergency vehicle was impacted during 83 percent of the weekday boat runs monitored in the study; only 26 percent of the weekend boat runs delayed at least one emergency vehicle.

The 1995 Final Rule

When the participants in the negotiated rulemaking proceeding were unable to reach consensus, the Coast Guard published a new Notice of Proposed Rulemaking (NPRM) on August 2, 1995 (60 FR 39287). The Notice proposed to adopt a new Final Rule that would set the following schedule for the opening of Chicago drawbridges during the boating season:

(1) On Saturdays and Sundays openings to accommodate two transits would be available each day, if requested 20 hours in advance of the intended time of passage, without regard to the number of vessels.

(2) Weekday daytime openings, with no minimum flotilla requirement, would be limited to Wednesday morning after 10 a.m., with 20-hour

advance notice.

(3) On Monday and Friday evenings, after 6:30 p.m., the bridges would be required to open to accommodate transits, if requested 6 hours in advance, with no minimum flotilla requirement.

(4) In addition to the above openings, which would be available for the passage of one or more vessels, supplemental openings could be scheduled for flotillas of 5 or more vessels, with 20-hour advance notice. These openings could not be requested for rush hour periods.

After reviewing the comments received, the Coast Guard's final rule adopts this schedule, which the Coast