Schedule B

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Clinton/Hell's Kitchen Neighborhood Traffic Study

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New York City Department of Transportation

Clinton/Hell's Kitchen

Neighborhood Traffic Study

INTRODUCTION

This study will be a comprehensive analysis of traffic and transportation conditions in the Clinton/Hell's Kitchen neighborhood with a strong emphasis on safety. The study area, which is located in West Midtown Manhattan, is bordered by West 55th Street to the north, West 29th Street to the south, 8th Avenue to the east and Route 9A to the west. The study area is immediately south of and adjacent to the West Side Manhattan Traffic and Transportation Study currently being conducted by NYCDOT.

The study area is home to a number of major regional transportation facilities such as the Lincoln Tunnel, West Side Highway (SR 9A), Penn Station, the Port Authority Bus Terminal, a ferry terminal, and, at the more local level, the Hudson River Greenway bike path. On the other hand the area attracts regional trips due to the location of facilities such as Madison Square Garden, Jacob Javits Convention Center, the cruise ship terminal and Midtown Manhattan CBD. The entire study area is poised to experience significant growth in residential, recreational and commercial development as a result of the Hudson Yards Rezoning & Development Program and the Number 7 Subway Extension actions. This allows for development at increased densities in the area. Currently however, the area has significant levels of congestion due to mainly regional traffic related to the facilities mentioned above. In addition there are changes in the composition of vehicles in the traffic stream, with more trucks being observed. This is due to trucks diverting to the Lincoln as they were banned for security reasons from the Holland Tunnel.

As a result of these situations and the competing demands for the use of the street network including curbsides, sidewalks and terminal/parking facilities careful analysis and evaluation is required in search of effective solutions, hence the need for the study.

This study will examine current and future travel and traffic demand in the area. The focus will be on all modes including pedestrians, cyclists, motor vehicles and transit. It will consider all issues in consultation with the community, elected officials, involved and interested agencies and other stake holders. A detailed data collection plan will be developed to gather information related to land-use and zoning, demographics, traffic & transportation, pedestrian, bicycles, transit service, goods movement, parking and safety.

A public outreach / participation plan will be developed as community involvement will be a key component throughout the study. This activity will facilitate the identification of community issues, problems and the development of potential solutions. Inter agency coordination is critical as various agencies have specific requirements, issues and jurisdictions within the study area.

GOALS AND OBJECTIVES

The goal of the study is to develop a comprehensive plan for the study area aimed at relieving traffic congestion, improving travel conditions and safety, and enhancing the quality of life of the residents of the Clinton/Hell's Kitchen area; as well as to be consistent with the goals of Plan NYC2030.

The objectives of the study are:

- To evaluate existing and projected future traffic and transportation conditions focusing on pedestrians, bicycles, vehicular traffic, trucks/goods movement, loading and unloading, parking, safety and transit.
- Maximize community participation early in the study process to facilitate effective issue identification and problem definition.
- To create a more pedestrian friendly environment for local residents and visitors.
- Explore opportunities to improve access to major destinations and facilities such as Lincoln Tunnel, Port Authority Bus Terminal, Penn Station and the Jacob Javits Convention Center.
- Develop short and long term strategies for improving travel and traffic conditions in the study area.
- Develop consensus on recommendations for effective early-action and long-term improvement measures.

The analysis of existing and future conditions will be focused on the following areas

- *Demographics*
  Examine socio-economic characteristics such as population trends, household size and income, labor force, car ownership rates, travel behavior and mode share.

- *Existing Land Use and Zoning*
  Examine existing and future land uses and zoning in the study area and assess their trip generation potential and possible impact on the area's traffic.

- *Vehicular Traffic*
  Examine issues related to vehicular volumes and congestion, roadway capacity, traffic controls and level of service (LOS), circulation and access, and vehicular travel speeds.

- *Pedestrians and Bicycles*
  Analyze issues related to pedestrian volumes, safety and circulation, accessibility to major commercial sites, subway stations and businesses; Perform capacity analysis including corner and crosswalks analyses, and evaluate and promote bicycle usage as an alternative mode for commuting and shopping.

- *Accident and Safety*
  Analyze accident history and trends, types, frequency and classes of accidents for at least the past three years.

- *Parking*
  Examine on and off-street parking supply and demand, utilization rates, parking regulations, price structure, and double and illegal parking activities.

- *Public Transportation*
  Analyze issues related to subway and bus lines and routes, stops and layovers, transit ridership, intermodal transfer points, schedules and intervals of services with the aim to improve service and increase market share.

- *Goods Movement*
  Analyze truck routes (local and through), deliveries and frequencies, loading and unloading areas and examines existing and future needs.

SCOPE OF WORK:

A. The study will conduct a basic **socio-economic** and **demographic** analysis of the study area by examining population trends, household size, income, labor force, car-ownership rate, travel behavior, to identify trends and determine various study area needs.
B. The study area will conduct a **land use** and **zoning** analysis. It will inventory general zoning classification and existing land uses. It will identify the major trip generators in the area; examine land use trends and changes, and associated potentials and characteristics.
C. The study will conduct **traffic** analysis by examining the existing and future traffic conditions. Data collection will include vehicle classification, turning movement and pedestrian counts for one of three midweek days (Tuesday, Wednesday, Thursday) during the AM, Midday, PM peak hours, one Saturday, and, if necessary, one Sunday during the peak hours at critical intersections in the study area, and install Automatic Traffic Recording (ATR) machines to collect daily volumes for a duration of seven days - 24 hours (in 15-minute intervals). The study will inventory street geometry and sidewalk widths, traffic flow directions, parking regulations, traffic controls, parking regulation

compliance, safety history, transit ridership, truck routes, and other relevant items as required for traffic analyses.

The study will perform a detailed **traffic** assessment of the study area. Problem intersections will be identified, and roadway capacity will be analyzed using the Highway Capacity Manual (HCM) and SYNCHRO methodology as appropriate. Existing traffic volumes, volume-to-capacity (v/c) ratios, vehicular delay, and levels-of-service (LOS) will be determined for the weekday AM (7-9), Midday (Noon-2PM), PM (4:30-6:30), and weekend (Noon-2PM) peak hours. Travel time runs will be conducted for each peak period for three consecutive weekdays concurrently with the traffic volume data collection. Three travel runs will be performed for each link during each peak travel period using the floating car method for the main arterials where congestion is evident.

D. The study will examine **goods movement** throughout the study area to assess the effect of goods movement generated by retail/commercial and other developments. The study will examine local and through truck routes, volume, and loading/unloading stations.

E. The study will examine pedestrian circulation and access and will conduct **pedestrian** counts at the key locations to analyze pedestrian levels of service for sidewalks, crosswalks, and corners. Pedestrian counts will be conducted concurrently with traffic volume data for each peak period for one of three consecutive weekdays and weekend peak periods. Bicycle demand will be examined as an alternative mode and the study will explore ways to create or enhance its network.

F. The study will conduct an inventory of existing **on** and **off-street parking** facilities within the study area, including a parking occupancy survey indicating supply and demand of each inventoried facility; Current parking (on- and off-street) conditions will be analyzed for the AM (7-9) midday (Noon-2PM), PM (4:30-6:30), and weekend (Noon-2PM) peak periods, including existing commercial or private lots/garages; Available capacity and average utilization of on- and off-street parking will be assessed for the selected peak periods for existing and future conditions. The study will also examine illegal and double parking in the area. Analysis will reflect changes in parking

supply and accumulated parking demand resulting from new developments. A map showing the location, capacity, and available spaces of each parking facility and identifying on-street parking regulations within the study area will be provided.

G. The study will analyze **transit** in the area, which includes existing bus and subway services, including their routes, stops, terminals, ridership, and frequency of services and adequacy of space for stopping and layover areas within the study area.

H. The study will recommend and assess measures to improve mobility, access, circulation and safety of pedestrian and vehicular traffic. Improvement measures will include Travel Demand Management (TDM) for reducing demand for automobile travel and for promoting public transportation, bicycling and walking. Transportation Systems Management (TSM) measures such as strategic enforcement, bicycle routes and parking, and changes in parking regulations, traffic signal timing, and direction of traffic flow will also be considered.

I. The study will prepare a detailed report on issues and recommendations regarding traffic, goods movements, pedestrians and bicycles, accidents and safety, parking, and transit.

J. The study will develop and implement a public outreach program to obtain community input throughout the study process. This will involve participation of elected officials, Community Board 4, transportation/transit providers, merchants/shoppers, and other community groups/civic organizations and City /State/ Federal agencies.

TASK 1: COMMUNITY OUTREACH

The community outreach is aimed at establishing an institutional frame work to facilitate a partnership among NYCDOT and stakeholders such as residents, businesses, transportation providers, Community Board members, elected officials, other agencies, service providers in the area and other interest groups. Since the development of improvement measures will require input from stakeholders, NYCDOT will conduct a series of community meetings and “walk-throughs” to identify issues and build consensus as the study moves forward.

This task will involve the following:

1.1 Project Advisory Committee

NYCDOT will establish a Project Advisory Committee (PAC) to facilitate the conduct and management of the study. The PAC will comprise of various city, state and federal agencies, as well as local stakeholders. This will help provide the diverse perspectives necessary to develop the improvement measures to achieve the goals of the study.

The Department envisions up to five PAC meetings throughout the course of the study to review key milestones during the two-year study process, beginning with a study initiation meeting prior to finalizing of this work program and the start of data collection. In addition to those meetings, NYCDOT will also convene a community walk-through session with PAC representatives. A summary of findings/issues from the community walk-through will be prepared and reflected in the study.

The composition of the PAC will be as follows

- Port Authority of New York and New Jersey (PANYNJ)
- New York State Department of Transportation (NYSDOT)
- New York City Department of City Planning (DCP)
- New York Police Department(NYPD)
- New York Metropolitan Transportation Council (NYMTC)
- Metropolitan Transportation Authority/New York City Transit (MTA/NYCT)
- Federal Highway Administration (FHWA)
- Federal Transit Administration (FTA)
- New York City Economic Development Corporation (EDC)
- New York City Department of Environmental Protection (DEP)
- Fire Department of New York (FDNY)
- Department of Sanitation of New York (DSNY)
- New York City Department of Health and Mental Hygiene (DHMH).
- New York City Department of Design and Construction (DDC)
- All state and city elected officials representing the study area
- Manhattan Borough President
- Community Board #4
- Community groups nominated by elected officials

Public Meetings:
Up to three public meetings or community forums will be conducted. The initial meeting will be a community "listening session" or charette to provide an opportunity for the public / community to express their concerns with respect to problem identification and definition. The second meeting will present the findings and the prioritizing of the problems / issues and identification

of potential solutions. A third public meeting will be scheduled if deemed necessary by the PAC.

The meetings will be promoted through the use of flyer mailings, press releases, the study web site, and e-mail. Transit accessible, conveniently located, ADA-compliant facilities will be identified for each meeting.

Community Board Meetings:
NYCDOT will present the study at a meeting of Community Board 4 and, as appropriate, at a meeting of the Community Board's Transportation Committee. Work will involve coordination with the CB, preparing presentation materials and preparing notes of the discussion.

Website:
NYCDOT will establish and maintain a website for the study, which will include updated information on study progress, data collected and a space for public comments via e-mail.

TASK 2: LITERATURE SEARCH AND DATA COLLECTION

Secondary data and available relevant studies will be used to provide a general analysis of the area's zoning & land use, demographics. This will involve referencing the following documents:

- Expanded Moynihan/Penn Station Redevelopment Project Supplemental EIS (Moynihan Station SEIS),
- Piers 92-94 World Market EIS
- 9th Avenue Renaissance: A Community Vision for Ninth Avenue, and
- Far West Midtown Transportation Study (DCP),
- Hudson Yards Rezoning EIS and any other relevant document discovered as part of the search.

TRAFFIC COUNTS

A detailed traffic count program will be developed to facilitate a comprehensive traffic analysis for approximately 63 locations.

Automatic Traffic Recorder (ATR) Counts:
ATR machines will be placed in the following locations for one week to record daily volumes in 15 minute intervals.

The ATR Count Locations (See figure 1)

1. 8th Avenue south of West 46th Street
2. 8th Avenue south of West 55th Street
3. 9th Avenue south of West 46th Street
4. 10th Avenue south of West 40th Street
5. 10th Avenue south of West 46th Street
6. 11th Avenue south of West 46th Street
7. West 41st Street east of 9th Avenue (Recently re-opened)
8. West 41st Street east of 11th Avenue
9. West 43rd Street east of 8th Avenue
10. West 44th Street west of 9th Avenue
11. West 45th Street east of 9th Avenue
12. West 55th Street east of 9th Avenue

The ATR counts will be scheduled to coincide with the manual turning movement counts and travel time runs described below. The following are the manual turning movement and vehicle classification count locations:

Manual Turning Movement & Vehicle Classification Counts:

Manual Turning Movement Count Locations (See Figure 1)

1. 8th Avenue at West 40th Street
2. 8th Avenue at West 41st Street
3. 8th Avenue at West 43rd Street
4. 8th Avenue at West 55th Street
5. 9th Avenue at West 43rd Street
6. 9th Avenue at West 44th Street
7. 9th Avenue at West 45th Street
8. Dyer Avenue, Lincoln Tunnel Access Road and Lincoln Tunnel on-ramp at West 36th Street
9. Dyer Avenue and Port Authority Bus Terminal Ramps at West 40th Street
10. Dyer Avenue and Port Authority Bus Terminal Ramps at West 41st Street
11. 10th Avenue and Port Authority Bus Terminal Ramps at West 40th Street
12. Lincoln Tunnel North Access Road at West 41st Street
13. Lincoln Tunnel North Tube Entrance at West 40th Street
14. 11th Avenue at West 35th Street
15. 11th Avenue at West 36th Street
16. 11th Avenue at West 38th Street
17. 11th Avenue at West 41st Street
18. 11th Avenue at West 43rd Street
19. 11th Avenue at West 44th Street
20. 11th Avenue at West 45th Street

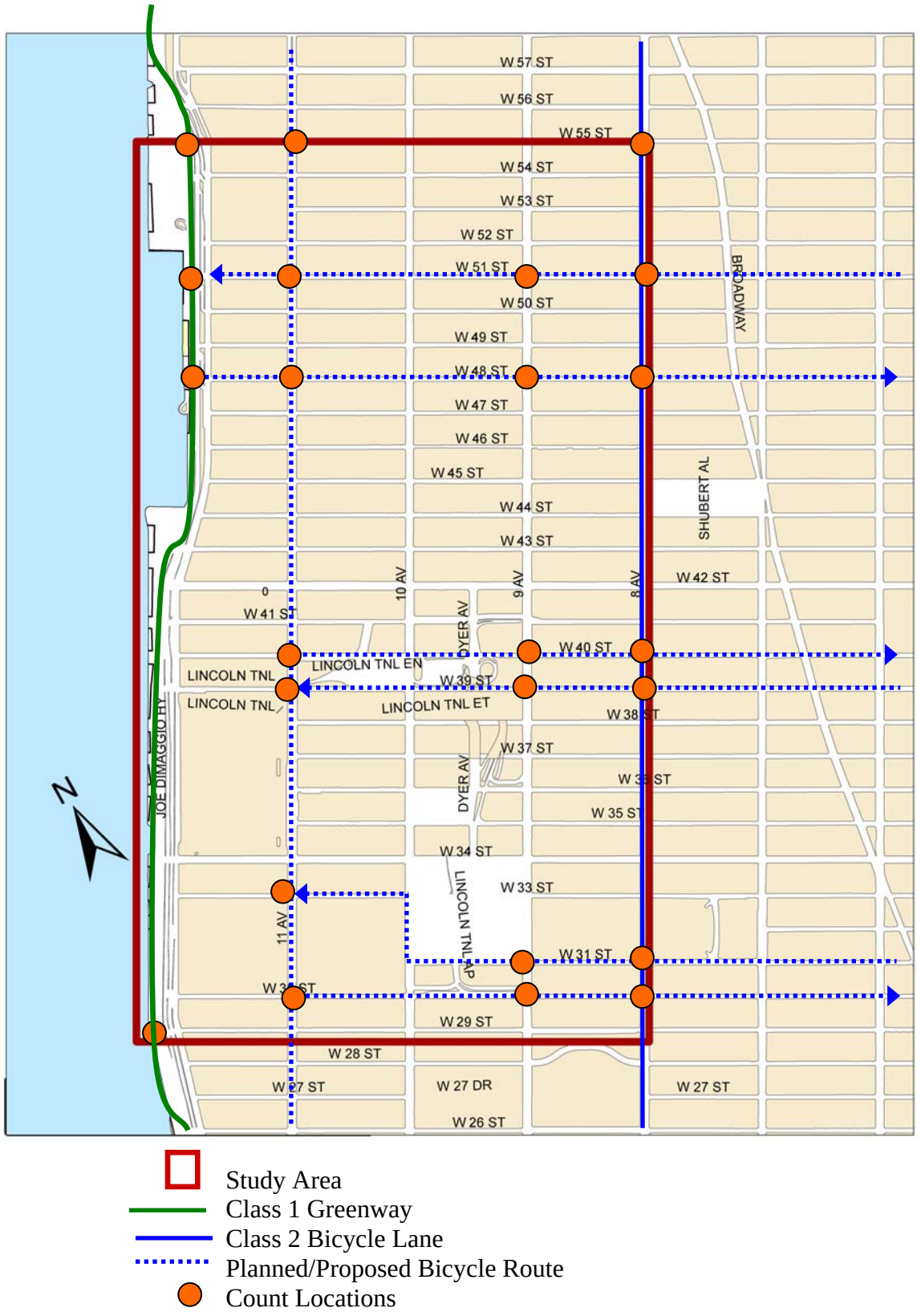
FIGURE 1: TURNING MOVEMENT COUNT AND ATR LOCATIONS

Bicycle Count Locations (See Figure 2):

1. Hudson River Greenway and West 29th Street
2. 8th Avenue and West 30th Street
3. 9th Avenue and West 30th Street
4. 11th Avenue and West 30th Street
5. 8th Avenue and West 31st Street
6. 9th Avenue and West 31st Street
7. 11th Avenue and West 33rd Street
8. 8th Avenue and West 39th Street
9. 9th Avenue and West 39th Street
10. 11th Avenue and West 39th Street
11. 8th Avenue and West 40th Street
12. 9th Avenue and West 40th Street
13. 11th Avenue and West 40th Street
14. 8th Avenue and West 48th Street
15. 9th Avenue and West 48th Street
16. 11th Avenue and West 48th Street
17. Hudson River Greenway and West 48th Street
18. 8th Avenue and West 51st Street
19. 9th Avenue and West 51st Street
20. 11th Avenue and West 51st Street
21. Hudson River Greenway and West 51st Street
22. 8th Avenue and West 55th Street
23. 11th Avenue and West 55th Street
24. Hudson River Greenway and West 55th Street

In addition, large bike racks and concentrations of parked bicycles will be noted.

FIGURE 2: BICYCLE COUNT LOCATIONS



Pedestrians counts will be conducted ant the following locations:
Pedestrian Count Locations (See Figure 3):

1. 8th Avenue and West 29th Street
2. 8th Avenue and West 37th Street
3. 8th Avenue and West 39th Street
4. 8th Avenue and West 41st Street
5. 8th Avenue and West 42nd Street
6. 8th Avenue and West 43rd Street
7. 9th Avenue and West 29th Street
8. 9th Avenue and West 34th Street
9. 9th Avenue and West 36th Street
10. 9th Avenue and West 37th Street
11. 9th Avenue and West 38th Street
12. 9th Avenue and West 39th Street
13. 9th Avenue and West 41st Street
14. 9th Avenue and West 42nd Street
15. 9th Avenue and West 43rd Street
16. 9th Avenue and West 45th Street
17. Dyer Avenue and West 34th Street
18. Dyer Avenue and West 42nd Street
19. 10th Avenue and West 34th Street
20. 10th Avenue and West 36th Street
21. 11th Avenue and West 34th Street
22. 11th Avenue and West 38th Street
23. 11th Avenue and West 42nd Street
24. Route 9A at Ferry Terminal crossing

FIGURE 3: PEDESTRIAN COUNT LOCATIONS

Travel Time and Delay Runs:
Travel time and delay runs will be performed along each of the numbered avenues in the study area, as well as Route 9A, between 28th Street and 56th Street on three midweek days during the AM, midday, and PM peak periods, concurrently with the ATR and manual turning movement counts. Both directions on West 34th and West 42nd Streets and the one-way pairs of West 35th/West 36th Streets and West 49th/West 50th Streets will also be surveyed. Travel time and delay runs will also be performed on one Saturday or Sunday concurrently with turning movement counts during the identified peak hours. The "floating car" technique will be used to record travel times at pre-established checkpoints.

TASK 3 – DATA EVALUATION AND ANALYSIS

A complete analysis of all the data will be undertaken for the existing and projected 2018 future conditions for all areas of analysis.

FIGURE 4: TRAFFIC ANALYSIS LOCATIONS

TASK 4: DEVELOPMENT OF IMPROVEMENT PLANS/ALTERNATIVES

After identifying the operational and safety issues based on the existing and future condition analyses, and in consultation with the PAC, a set of preliminary improvement alternative measures will be developed for the short- and long-term. Measures of effectiveness will be developed and applied, including cost measures that would result in the development of the most cost effective set of improvements to meet the goals of the study. Alternatives will be examined by developing scenarios such as: 1) traffic improvements 2) transit improvements 3) Traffic Demand Management strategies and combinations thereof.

Another PAC / Community outreach meeting will be conducted to develop consensus on the preferred improvement alternative.

Deliverables: - Technical Memorandum #2 – Development and Evaluation of Alternatives

TASK 5 - DRAFT FINAL REPORT AND FINAL REPORT

A Draft Final Report will be prepared summarizing:

- Goals and objectives of the study;
- Community outreach and PAC coordination effort;
- Data collection effort and results;
- Existing condition analyses;
- Future condition analyses;
- Future condition analyses with proposed short- and long-term improvements;
- Prioritization of the short- and long-term improvements and strategy for sequencing of improvements to achieve the greatest benefit; and
- Recommendations

After further consultation with the PAC, a Final Report will be prepared.

SUMMARY OF STUDY DELIVERABLES

1. Technical Memorandum 1 - Existing and Future Conditions: Summer 2008
2. Technical Memorandum 2 – Development and Evaluation of Improvement Measures: Spring 2009
3. Draft Final Report: Summer 2009
4. Final Report – Clinton/Hell's Kitchen Areawide Traffic Management Plan: Fall 2009

Begin Date: May 1, 2007
End Date: October 31, 2009