Prospect Heights Neighborhood Development Council

Atlantic Yards Arena and Redevelopment Project

Comments on the General Project Plan and Draft Environmental Impact Statement

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1. Summary of findings and recommendation

The Prospect Heights Neighborhood Development Council appreciates the opportunity to present its comments on the Atlantic Yards Land Use Improvement and Civic Project General Project Plan and the Atlantic Yards Arena and Redevelopment Project Draft Environmental Impact Statement to the Empire State Development Corporation, our elected officials, and public agencies. PHNDC and its member organizations have closely followed the Atlantic Yards proposal since its announcement in December 2003. PHNDC welcomes the sponsors' commitment to create a significant number of affordable housing units as a function of this project, and recognizes their intention to bring jobs and other economic opportunities to the local community. However, it isn't possible (and shouldn't be necessary) to equivocate these benefits with the many detrimental effects the sponsors' proposal would have on life in the surrounding areas. After due consideration upon our review of the GPP and DEIS, PHNDC recommends that the Board of Directors of the Empire State Development Corporation disapprove the Atlantic Yards project as it is presently constituted. Significant aspects of the project's current design are unworkable, and the impacts associated with the construction and occupation of the proposed spaces can not be sustained by the surrounding communities—or the borough of Brooklyn as a whole—without substantial changes to the project's plan or mitigations of its impacts not described in the DEIS. Further, PHNDC is deeply concerned that the lack of public participation in the project's proposal and review process to date, combined with the absence of a plan for involving local government and community stakeholders in the oversight of the proposed project's implementation, indicate that realized impacts on the residents and businesses in neighborhoods surrounding the project would likely be far worse even than those described in the DEIS if the project were to be approved. Finally, PHNDC objects to the phasing of most claimed benefits of the proposed project (including most of its affordable housing and all of its public open space) in the second phase of its construction, as this structure represents an unacceptable transfer of risk from the developer to the community, which may fail to realize the project's benefits should its first phase fail to meet the developer's success criteria.

PHNDC is not yet convinced of the sincerity of the project's stated goals, including its principal goal "to transform an area that is blighted and underutilized into a vibrant, mixed-use, mixed-income community…"[1]. Although one can argue the finer points of what constitutes "blight," we are not aware of any instance of the term being applied to the proposed project site prior to the developer's announcement of its plans. Nor does the GPP or DEIS describe any specific efforts on the part of the State of New York, the City of New York or its agencies (including the NYPD) to address purported conditions of blight in the site area prior to the project's announcement. However, we note that for several years prior to the project's announcement, development activity in its proposed site has indicated that the area is readily marketable as a desirable place to live. Under the circumstances, it does not appear to be necessary to require a publicly-subsidized $4 billion construction project to revitalize a neighborhood whose transition is already established. Rather, the definition of "blight" seems to have been tailored to meet the goal of justifying Atlantic Yards in its proposed form.

PHNDC strongly supports zoning and land use changes that preserve and enhance the socioeconomic diversity of the Prospect Heights community. However, an analysis of the distribution of residential units that would be created by the proposed Atlantic Yards project shows that the majority of such housing would be targeted at households with incomes above $100,000 per year. No units are to be allocated to households with incomes less than $20,000 per year, even though such households make up nearly a quarter of the population of the DEIS study area. The Atlantic Yards project, by its own accounting, would therefore fail to accomplish its goal to "transform" the area into a "mixed-income community," and instead would significantly erode the existing socioeconomic diversity of the surrounding neighborhoods, displace current low-income residents, and likely add to conditions of homelessness in New York City.

It would be reasonable to expect that a major development conferring substantial benefits on nearby populations would be accompanied by fully transparent design and review processes that allow for maximum public oversight and community participation. However, since its announcement, the Atlantic Yards project has been marked by strategies that avoid public scrutiny to the greatest extent possible. The

[1] *Atlantic Yards Land Use Improvement and Civic Project General Project Plan*, Empire State Development Corporation, July 18, 2006.

project's review under New York State Environmental Quality Review Act circumvents the oversight role played by community boards and local elected officials with respect to other large development projects reviewed under the New York City Uniform Land Use and Review Procedure. Many aspects of the project's design still have not been shared with the public; even the site plans contained within the DEIS carry the legend "For Illustrative Purposes Only." The developer refused the combined request of Community Board 8 and PHNDC to have the project designers make a presentation to District 8 community members. The ESDC declined community requests for resources for independent technical analyses of the project impacts, even though such assistance may be facilitated under SEQRA law.

Of greatest concern, however, has been the insufficiency of the time allotted by the sponsors for public review and testimony on the GPP and DEIS. These documents were released in the middle of the summer of 2006, when local community boards and civic organizations are normally not in session, and many New Yorkers are away from home vacationing with family members. The sponsors allowed only sixty days for community members to review and respond to a project plan that had been under development for nearly three years. Lastly, the circumstances and scheduling of the public hearing and forums have made it difficult or impossible for all community members wishing to testify before the ESDC to do so. Rather than exemplify confidence on the part of the developer and sponsors in the net benefits of their proposal to the people of Brooklyn, their handling of the review process seems to indicate an interest in hurrying the project's approval before its true scope can be properly understood. PHNDC finds this approach troubling given the historic scale of what has been proposed for the site.

It is possible that a more inclusive design and review process would improve the plan's likelihood of meeting its stated goals, which include adding to the open space available to the community, creating a lively street environment, and fostering connections between the adjoining neighborhoods of Prospect Heights, Fort Greene, Boerum Hill and Park Slope. However, the project presented in the GPP contains serious design flaws that will inhibit, not promote, the achievement of these goals. Chief among these flaws is the project's use of a "towers in the park" design strategy that has been discredited among urban planners for decades. This approach involves the demapping of local streets in order to create superblocks with no through access. Rather than connecting the neighborhoods surrounding the development, the current Atlantic Yards plan will forever insulate them. The residential towers do not form the continuous street wall necessary for the retail applications that will create truly lively street life. Instead, urban design experience indicates the isolated towers are more likely to create dead areas of limited activity, which may even pose safety risks to residents. Finally, the "towers in the park" design results in a configuration of open space that relegates almost all of what is proposed to the interior areas of the superblock. These areas are not at all likely to be perceived or experienced as "public" by community members. Instead, the space appears to be programmed as a private courtyard of an apartment complex; in fact, the GPP states the space will be privately administered. Given the propensity of such spaces to become increasingly privatized over time, PHNDC doubts the Atlantic Yards plan's goal of providing significant new public open space will be met under the current design.

PHNDC rejects the GPP's plan for the entire 22 acre site to be leveled at the outset of Phase I, even though construction of buildings on the larger eastern portion of the site will not begin until 2010 at the earliest. The amount of staging area being sought by the sponsors seems unusually large, even for a project of the proposed size of Atlantic Yards. Nor will PHNDC support the interim creation of a gigantic surface parking lot. Such a feature could well become permanent if the project's second phase is delayed or cancelled, presenting a blighting influence on the neighborhood more significant than those the Atlantic Yards sponsors claim exist today.

Many of the Atlantic Yards project's adverse impacts as described in the DEIS stem directly from the sheer scale of what has been proposed. Commentators have noted that the project would create an area more than twice as densely populated as the densest development in America today.[2] PHNDC is not satisfied that the DEIS has captured the entire scope of the adverse impacts that would be realized from a development of such an unprecedented size. We believe the analysis of traffic and transit impacts must take into account development that has already been approved for downtown Brooklyn, Fourth Avenue, and Atlantic Avenue. Overriding New York City zoning resolutions enables the project sponsors to propose an arena

[2] "Prisoner of Atlantic Avenue", *The New York Observer*, July 18, 2006.

within 200 feet of residential areas of Prospect Heights. The DEIS does not present a thorough assessment of the impacts that the area will cause, and the mitigations prescribed for the impacts that are identified are insufficient. The DEIS describes no meaningful efforts to address the pedestrian, auto, bus and truck traffic associated with the arena that will filter through Prospect Heights. The scope of the analysis must also include the major area highways that travelers will use to reach events at the proposed arena, in particular the Brooklyn Queens Expressway, already at or over capacity in daily trips. Finally, PHNDC is concerned that the DEIS has in effect deferred investigation of the project's burdens on police and fire services until some point after the project presumably has been built.

The DEIS suffers from a tendency to assess certain impacts in subjective terms that are self-serving with respect to the proposed plan's acceptance. PHNDC does not agree with the DEIS' assertion that loss of sight lines to the landmark Williamsburg Savings Bank building can be compensated with a view of the sponsors' proposed skyscrapers. Nor can we condone the destruction of historic structures within the project footprint solely on the basis of the sponsors' judgment that integrating them into the proposed project would be inconvenient.

It is PHNDC's recommendation that significant changes to the proposed Atlantic Yards project be required for the plan to be allowed to proceed. We call on the project sponsors to implement the following changes:

- a substantial reduction in project scale by at least one half to provide additional mitigation for its most adverse impacts, and project density contextualized in relation to its neighbors, with the greatest density concentrated near public transit;
- preservation of the blocks proposed for demapping under the current plan;
- the reconfiguration and expansion of programmed open space with the open areas bordered by streets;
- the redesign of the residential buildings in the eastern project site such that their structures form a continuous wall along publicly-accessible streets;
- the reuse and integration into the project plan of the historic Ward's Bakery building;
- recalculation of housing affordability levels according to Brooklyn's Area Median Income; and
- construction of at least one third of the affordable housing units in the first project phase.

PHNDC further calls upon State and City government agencies and elected officials to commit to additional mitigations that address the impact of the project to traffic and transit in the areas surrounding the project. Such mitigation measures should include

- a congestion pricing plan for downtown Brooklyn and its feeder highways;
- residential permit parking; and
- additional traffic calming measures in adjoining neighborhoods including measures that mitigate the proposed arena's close proximity to a residential zone.

Independent research commissioned by PHNDC among residents of Prospect Heights indicates that a majority sees the development of the northern areas of the neighborhood as being positive for the community, particularly when such development includes the creation of affordable housing. Large majorities, however, express concern when confronted with the likely impacts of the proposed Atlantic Yards construction.[3] To ensure acceptance by the public, a revised Atlantic Yards plan needs to incorporate a meaningful oversight process that involves local elected officials and civic organizations, and that spans the lifecycle of the development.

[3] *Prospect Heights Neighborhood Survey Summary Report,* Pratt Institute Center for Community and Environmental Development, October 2004

2. Background

2.1 Brooklyn Atlantic Yards project

In December of 2003, Forest City Ratner Corporation (FCRC) announced plans for Brooklyn Atlantic Yards (BAY), a large-scale, mixed-use real estate development. The 22-acre parcel of land proposed for development is bordered by Atlantic Avenue to the north, Dean Street to the south, Flatbush Avenue to the west and Vanderbilt Avenue to the east. FCRC's initial plan called for the use of space over the Metropolitan Transportation Authority's (MTA) Vanderbilt rail yards, as well as FCRC's acquisition of adjacent commercial and residential properties to the south of Atlantic Avenue, potentially through the use of eminent domain. The use of MTA property, as well as eminent domain, would apparently allow the project planning to be coordinated through the Empire State Development Corporation (ESDC) under the New York State Environmental Quality Review Act (SEQRA). Unfortunately, when compared to the New York City Unified Land Use Review Process (ULURP), SEQRA provides for little or no local governmental oversight, and limited public review.

In March of 2005, FCRC, the City of New York, and the ESDC signed several Memoranda of Understanding (MOUs) with respect to the proposed project site and adjacent sites west of Flatbush Avenue and north of Atlantic Avenue. The MOU with respect to the original BAY project site was publicly announced, but MOUs with respect to the other sites were not disclosed until August 2005, when a local community organization obtained copies through a FOIA request. Together with the originally proposed BAY site, the additional sites make the combined project the largest development project in Brooklyn's history.

In July of 2005, the MTA received responses to its previously-issued request for proposals (RFP) for the Vanderbilt Yards site. FCRC bid $50 million for the site; a competing developer bid $150 million with a proposal to build a smaller project. However, the MTA subsequently announced its intention to negotiate exclusively with FCRC, and allowed FCRC sixty days to improve its bid.

Also in July of 2005, FCRC announced the execution of a Community Benefits Agreement (CBA) intended to demonstrate the developer's intention to provide for affordable housing, job training and certain community programs as a function of the BAY project. In addition to FCRC, the CBA was signed by eight organizations that are to administer the proposed benefits programs under the agreement should BAY proceed. Although the CBA contains a provision for one of the eight groups to work with FCRC in assessing environmental impacts, the CBA makes clear the fact that all impact analysis and mitigation requirements are to be determined through state-mandated processes (e.g., SEQRA), and as such the CBA does not bind the developer with respect to environmental impacts. In October of 2005, it was reported and confirmed that some of the CBA signatories had a direct financial relationship with FCRC[4], and that the developer had played a role in organizing at least one the groups[5].

In September of 2005, the MTA awarded the development of the Vanderbilt Yards to FCRC. The ESDC announced its role as lead agency with respect to the development under SEQRA, and published a draft scope for the EIS. The ESDC accepted written comments on the draft scope of analysis until October 28, 2005. The volume of comments received by the ESDC was reportedly large. Many community organizations, including PHNDC, published their written submissions to the ESDC. Among the comments most frequently repeated were

- the need to expand the boundaries of the study area;
- the need to consider the effect of the proposed project on direct and indirect displacement of residents and businesses;
- the need to consider other development proposed for Brooklyn when determining traffic and transportation impacts;

[4] "BUILD admits Ratner funding," *New York Daily News,* October 18, 2005

[5] "To Build Arena, Developer First Builds Bridges," *The New York Times,* October 14, 2005.

- the need to assess how the project can be better integrated with the surrounding neighborhoods; and
- the need to establish processes through which the community can be effectively engaged during the environmental review.

The ESDC issued the final scope of analysis on March 31, 2006. Community organizations reviewing the final scope generally were disappointed with the relatively small increase in the size of the primary and secondary study areas, which were each increased from the original quarter mile and half mile radii by a quarter mile each (some civic groups and community boards had asked to expand to a two-mile radius). Also absent from the final scope was any suggestion of a process to involve the community in the activities leading up to the publication of the DEIS.

On July 18, 2006, the ESDC released the Atlantic Yards General Project Plan and its Draft Environmental Impact Statement. The ESDC further announced a sixty-day review period extending to September 22, 2006, with a public hearing scheduled for August 23, and a "community forum" on September 12. Civic organizations, community boards, and elected officials expressed frustration and outrage over the timing of the release, which was made during a two-month period when New York's community boards generally do not meet, and many residents are away from the city on family vacations. The scheduling of the "community forum" on the date of New York's Democratic primary election was also challenged by groups seeking broader public participation in the review process. The ESDC subsequently announced a one-week extension of the deadline for comments to September 29, and an additional "community forum" on September 18. However, this action was not enough to address the concerns of Community Board 6, which subsequently voted to disapprove the Atlantic Yards project, citing "a failure to involve the community board and the community in a meaningful way; misleading and overstating the involvement of the public in the process[6]."

2.2 Prospect Heights Neighborhood Development Council

Forest City Ratner's Atlantic Yards proposal in many ways was the culmination of a pattern of development of the industrial blocks of northeastern Prospect Heights, beginning most significantly with the conversion of the abandoned Daily News printing facility into the Newswalk condominium project in 1999. However, the magnitude of the development potential of the area had not been recognized by the community as a whole prior to the unveiling of FCRC's plans. Other sizeable new construction projects in Prospect Heights broke ground or were proposed in the winter of 2003-2004. The strength of the New York real estate market appeared to be propelling the neighborhood into new directions that had the potential to alter—for better or worse—the scale, character and demographics of Prospect Heights.

The Prospect Heights Neighborhood Development Council (PHNDC) was formed in February 2004 by a group of community organizations and block associations interested in working together to better understand and guide the future of development in Prospect Heights. PHNDC's mission is: (1) To assess the needs and concerns of the Prospect Heights community in terms of housing, economic development, physical environment, safety and security as well as social services; (2) To prepare or sponsor analyses of potential development in the Prospect Heights community, including the impact of such development on the existing conditions in Prospect Heights; (3) To represent the interests of its member organizations in relations with elected officials, public agencies, and commercial interests; and (4) To coordinate the participation of its member organizations in fulfilling the above purposes.

The member organizations of PHNDC are:

- The Carlton Avenue Association
- The Dean Street Block Association
- The Eastern Parkway Cultural Row Neighborhood Association

[6] "Loud & Clear: CB6 Rejects Atlantic Yards," *Brooklyn Heights Courier,* September 15, 2006.

- The Park Place/Underhill Avenue Block Association
- The Prospect Heights Association
- The Prospect Heights Parents Association
- The Prospect Place Block Association
- The Vanderbilt Avenue Merchants District

The current officers of PHNDC are:

- Gib Veconi, Chairman
- Peter Krashes, Vice President
- Danae Oratowski, Secretary
- Raul Rothblatt, Treasurer

PHNDC has worked to communicate the perceptions and priorities articulated by neighborhood residents to public officials and other organizations active in the community. PHNDC is also continuing to work to provide Prospect Heights residents with independent, objective information with respect to major development projects proposed for this community. Finally, PHNDC has joined with other community-based organizations in adjoining neighborhoods to represent the Prospect Heights community in the Council of Brooklyn Neighborhoods (CBN), an umbrella organization of local groups interested in increasing public participation in the Atlantic Yards review process.

2.3 About this report

2.3.1 Purpose and audience

The purpose of this report is to provide community commentary on the Draft Environmental Impact Statement for the Atlantic Yards Arena and Redevelopment Project released by the Empire State Development Corporation on July 18, 2006. PHNDC intends that all content presented in this report be considered by ESDC in its evaluation of potential impacts of the proposed project to the surrounding neighborhoods. The report will focus specifically on issues raised in PHNDC's comments on the draft scope of analysis which were submitted to the ESDC on October 28, 2005, as well as other concerns regarding the proposed Atlantic Yards development which have been identified by PHNDC member organizations since that time.

The audience for this report is

- the staff, officers and board of the Empire State Development Corporation;
- officials of Forest City Ratner Company and Forest City Enterprises;
- local, State and Federal elected officials;
- administrators and staff of relevant public agencies;
- community board members; and
- residents of the Prospect Heights community, and those of other neighborhoods surrounding the proposed project.

2.3.2 Sources

Since the time of its announcement in December of 2003, a great deal has been written on the Atlantic Yards proposal, including a significant amount of informed commentary by urban planners, engineers, and investigative reporters. PHNDC appreciates the work of the individuals who have made their research, findings and insights available on the Internet.

As a member of CBN, PHNDC has worked to plan and secure funding for professional assistance to provide the communities that would be affected by the Atlantic Yards with an independent technical analysis of the DEIS. PHNDC is grateful for the work of CBN and its consulting team, who have provided invaluable insights into the contents of the GPP and DEIS.

We have used our best efforts to cite sources of information presented in this report.

2.3.3 Writers and editors

Finally, this report owes much to the work of the members of PHNDC's constituent organizations, who have prepared and edited the report's text. Their knowledge of Prospect Heights, its streets, buildings, homes, businesses and people have been critical PHNDC's efforts in sifting through the enormous amount of material presented in the DEIS and by its commentators, and preparing this response within the very short deadline set by the ESDC. The following individuals contributed writing or editorial assistance to the creation of this document:

- Sally Brodsky
- Steve Commender
- Peter Krashes
- Jesse Mosier
- Denis Nash
- Danae Oratowski
- Roz Parr
- Jeremy Rinzler
- Gib Veconi

3. Comments on the Draft Environmental Impact Statement

3.1 Land use, zoning and public policy

3.1.1 Critique of blight as a rationale for Atlantic Yards

The DEIS justifies the proposed project in part by claiming the site area is blighted. The General Project Plan's Blight Study claims that crime rates in and around the project site are unusually high. This conclusion is not supported by fact, experience, or even the information presented in the Blight Study itself.

For the six years prior to the project's announcement in December 2003, the writer served on the Executive Committee of the 77th Precinct Community Council, whose borders include most of the project site. During this period, the New York City Police Department introduced the Compstat program, in which crime statistics by location were closely monitored as a tool to deploy police resources, he heard monthly reports from its commanding officer on crime conditions in the Precinct. During that time, he does not recall ever hearing of a high incidence of crime in the northern blocks of sector A. Nor is PHNDC aware of any targeted policing activity ever being discussed for that area. In February of 2003, Mayor Bloomberg announced Operation IMPACT at a press conference at the 77th Precinct. IMPACT deployed concentrated numbers of police officers tactically in high-crime areas throughout New York City. If, ten months before the Atlantic Yards project's announcement, the Police Department considered the project site a high-crime area, one would expect to have had IMPACT resources deployed there. However, there were no IMPACT officers ever assigned there.

The GPP cites a high crime rate in the 88th Precinct sector E as evidence of the blighting influence of the railyards. According to statistics presented, the largest contributing category of crime is grand larceny, but the report does not explain what specific types of grand larceny could be taking place within a fenced, below-grade railyard. Instead, the study asks us to assume that the existence of the railyards in sector E must be the cause of crime in the vicinity. It wouldn't have been necessary for the study to make such assumptions if its authors had interviewed the command of the 88th Precinct. If they had, they would likely have discovered the crime problem in sector E is related to Fulton Street and Classon Avenue, not the railyards.

Although the Blight Study is full of many photos and detailed descriptions of properties in the area, it fails to identify even one single specific crime as having occurred within the site footprint. In fact, by its own admission, none of the crime statistics reported in the Blight Study may have taken place within the project site at all. Nor does the Blight Study mention that the index of major crimes in the 77th Precinct has fallen eighty percent in the last thirteen years. It seems extremely unlikely that a $4 billion construction project is necessary to address the remaining issues of crime in the railyards area between Prospect Heights and Fort Greene.

Instead, it should be recognized that the GPP's finding of blight is in many ways a self-fulfilling prophecy. The developer had begun working to clear the proposed project site of its residents as early as January of 2004, more than two years before the GPP's blight study was undertaken. It may be that this fact alone invalidates the study's conclusions. In any case, we do not believe a precedent of allowing a developer to introduce blight into an area to justify the taking of property through the use of eminent domain is socially sustainable in New York City. Blight must be set aside as a justification for the proposed project.

3.1.2 Inadequate justification for zoning changes

The proposed project would introduce significant land use changes and increased density to a site that sits largely within Prospect Heights, a community of low-density mixed use and residential zoning. The floor area ratio of the buildings to be constructed is roughly equal to 85% of the brownstone rowhouses in Prospect Heights. The DEIS argues that the changes would be significant, but not "adverse" because they would be mitigated or, in some cases, beneficial to the community. It finds the current footprint to be outside Prospect Heights and of a nature (when the rail yards are included), to separate Prospect Heights, Fort Greene, Boerum Hill and Park Slope, and argues that the proposed project will help the surrounding residential subareas integrate with each other. The DEIS argues that the land-use and density of downtown

Brooklyn are appropriate for the project site because the project is near public transportation. It also argues that sufficient protections—through zoning and landmarking—are in place to protect the surrounding neighborhood from land use and zoning changes.

The DEIS does not fully disclose the extent of the density increases.The proposed project would result in the densest census tracts in the United States. The residential density of the proposed apartment complex, at one person per sixty-six square feet, would exceed that of any development in Brooklyn.

The DEIS largely relies on a transportation based argument to support the density of the project called for in the GPP. As PHNDC argues elsewhere in this submission, we believe that DEIS underestimates the project's impact on our already overtaxed transportation system and offers no new mass transit solutions, such as Bus Rapid Transit. Proximity alone to a transit hub does not make the project transit-oriented. By the DEIS's logic, any density, no matter how great, could be justified by building close to a transit hub. In addition, the DEIS does not acknowledge that the eastern portion of the site falls far from the transit hub.

The DEIS also justifies the project's density by comparing it to the Downtown Brooklyn rezoning. However, the Downtown Brooklyn Plan incorporates only a portion of the project (blocks 927 and 1118). We believe a more appropriate standard for comparison would be the rezoning the Department of City Planning recently approved for the district immediately north of the project site on Atlantic Avenue, which permits a maximum FAR of 6 on the Atlantic Avenue corridor. This rezoned area is still closer to public transportation than the eastern end of the project site; whose FAR would be significantly higher.

The DEIS' assertion that the proposed project would integrate the surrounding neighborhoods currently separated by rail yards is subjective and insufficient justification for the proposed density. The closure of city streets, the design of open spaces as a privately-regulated enclave, and the increase in traffic will discourage the passage of pedestrians between neighborhoods.

3.1.3 Impact of the arena

The Atlantic Yards project includes a significant point of destination, an arena, which has many unique impacts, most particularly overwhelming transportation and parking needs that may not wisely be partnered with a high density development.

According to New York City zoning regulations, any arena must be 200 feet from mapped residential areas. This is not the case with the arena proposed for the Atlantic Yards project. The DEIS acknowledges only adverse impacts to the residents who live adjacent to the arena loading area but fails to include analysis of important impacts associated with an arena like traffic congestion (and its impact on residences as well as on loading and unloading for existing businesses), pedestrian noise (and its impact on residential uses extending far from the project), auto as well as truck and bus routes, and the likelihood of neighborhood retail being displaced. The DEIS claims that design of residential towers around the arena mediates the arena's presence and concludes that "there is no significant impact because the uses rationally relate to uses and densities allowed under the existing zoning in the area." Although the towers might mediate the void the arena creates when it is inactive, they do not mediate the arena impacts when in use, and in fact, aggravate the impact of traffic and demand for parking. The design of the arena and its adjacent residential buildings does not connect with the surrounding area. From what is known about the street level design of the arena block, other than the Urban Room, there will be no street level retail or services that would activate the area. Instead, three sides of the project's perimeter at street level will be dedicated to drop off lanes and loading dock operations.

3.1.4 Impact on manufacturing zone

The DEIS asserts that "the ability of the proposed project to alter land use patterns in the study area would be minimal given existing land use patterns, existing zoning regulations and historic district designation." Zoning changes can be made at any time, and developer-initiated zoning changes are quite common. In addition the trend in northern Brooklyn over the last two decades has been towards greater up zoning around wide avenues. Finally, as noted elsewhere in this submission, the existing Prospect Heights Historic District is a National Register Historic District, not a New York City Landmarks Historic District. The National designation does not regulate the type of development that can take place within a district.

The changes in land use within the project site will trigger rapid conversion of manufacturing to higher density residential sites within Prospect Heights' M1 zone. As PHNDC has argued in response to the socioeconomic impacts of the project, the project will increase land values and rents in the area, encouraging the displacement of residents, artists and manufacturers in the neighborhood to allow for the construction of higher density residential buildings. These changes may be achieved even in the absence of rezoning and BSA variances. Since both Prospect Heights' residential and manufacturing districts are under built relative to current zoning, changes in density may occur simply by building up to the maximum allowable FAR of soft sites.

While the DEIS notes adverse impacts on the M-1 zone along Atlantic Avenue, it does not address the M-1 zone that is its most immediate neighbor to the south between Carlton and Vanderbilt or the C4-4A zone adjacent to the Newswalk building. Besides encouraging conversion to residential, the change of land-uses provided by the project will impact the M-1 zone in other ways, such as encouraging parking lots and garages which can be built as of right. The DEIS fails to consider how increased traffic and infrastructure work on local streets will negatively impact manufacturing operations.

3.1.5 Impact on residential areas

Prospect Heights is not currently protected by enforceable historic designation, making the residential areas highly vulnerable to over-development. Landmark status still permits both the expansion to existing buildings as well as the demolition and rebuilding of properties at a higher density. The DEIS should have included a study of the soft sites in Prospects Heights, which would have identified that a significant portion of sites are built under the maximum allowable FAR. In addition, enforceable historic designation, if it comes, will still exclude large swaths of the residential neighborhood zoned R6-B.

3.2 Socioeconomic conditions

3.2.1 Reduction in socioeconomic diversity

Although the DEIS asserts that Atlantic Yards "transform" the area into a "mixed-income community," PHNDC believes that the proposed project would significantly erode the existing socioeconomic diversity of the surrounding neighborhoods, displace current low-income residents, and likely add to conditions of homelessness in New York City.

The DEIS states that: "Similarities between the proposed project housing mix and the housing mix currently present in the 3/4 mile study area indicate that the socio-economic profile of new households would be comparable." In fact, an analysis commissioned by the Council of Brooklyn Neighborhoods shows that the majority of such housing created by Atlantic Yards would be targeted at households with incomes above $100,000 per year. No units within the proposed project are to be allocated to households with incomes less than $20,000 per year, even though such households make up nearly one quarter of the population of the DEIS study area.

The DEIS does a poor job of analyzing the project's impact on secondary displacement in the surrounding neighborhoods, particularly those neighborhoods in the immediate area. The DEIS analysis ends in 2016, the year the project is to be completed. However, the impact of the project on secondary displacement is likely to occur only after the project is fully occupied. The DEIS also minimizes the impact of secondary displacement by claiming that since a larger portion of the at risk-population lives beyond the site, this group is less vulnerable to displacement. The DEIS does not provide an analysis for the displacement of residents within the 1/4 radius in the neighborhoods of Fort Greene and Prospect Heights. Many of the blocks within these brownstone neighborhoods are comprised of building with fewer than four rental units, which offer no rent protections.

3.2.2 Impact of land use and zoning changes

The DEIS fails to consider how the project's changes in land use and zoning will induce growth within Prospect Heights' M-1 zone that will subsequently effect displacement of existing residents and businesses. According to the DEIS: "The retail space planned under the proposed project is intended to house

neighborhood retail that would primarily support the local residential and worker population. It would not include destination or big box retail, which might draw customers from a larger trade area. Therefore, the proposed retail would not have the potential to affect existing economic patterns."

However, the DEIS does not acknowledge that the surrounding M-1 zone in Prospect Heights is particularly vulnerable to changes in land use and zoning that would permit the development of big box retail. The large lots within the M-1 zone would be able to accommodate large scale residential and retail development. This would encourage the displacement of existing residential and commercial tenants who cannot afford higher rents. Zoning regulations would not offer protections since some new land uses, such as parking garages, could be built as of right, and developers can easily seek changes through variances.

3.2.3 Changes in local businesses

The DEIS states that retail and restaurants may benefit from increased demand created by the project, but does not acknowledge the degree to which neighborhood services will be adversely impacted. According to the DEIS: "The influx of residents, employees, and visitors to the study area would create a sizable new customer base for existing and future retail services and businesses." Nonetheless, the DEIS admits, it is likely that upward pressure on retail rental rates on account of the proposed project would lead to the indirect displacement of some existing businesses along Vanderbilt Avenue and Flatbush Avenue. The businesses likely to benefit from the project are those that serve the influx of employees and visitors to the project, especially the arena. The DEIS acknowledges that businesses likely to be adversely affected due to rising pressure on rents are those businesses that offer what the DEIS terms "neighborhood services" to the existing residential community of Prospect Heights: small groceries, dry cleaners, bakeries and laundromats which serve the day to day needs of residents of the neighborhood.

The DEIS dismisses the adverse impact of the loss of these services because: "These businesses are not unique to the 3/4-mile study area, do not define the character of the neighborhood, do not have substantial economic value to the city, and do not have locational needs that would preclude them from relocating elsewhere in the city."

However, the DEIS does not consider the economic value of these businesses to the existing residents of the community. These businesses define the character of the neighborhood because they serve the local community. They may not have substantial economic value to the city overall, but the do have economic value to the residents of Prospect Heights. Everyone in Prospect Heights will pay a premium if everyday goods and services are not easily available or affordable in the neighborhood.

Since the project will override city zoning to permit an arena 200 feet within a residential area, the DEIS should have studied the socioeconomic conditions around arenas in other cities. What businesses and services exist around other arenas and how would the creation of new businesses impact the socio-economic conditions of a residential neighborhood?

3.2.4 Construction impacts on local businesses and residents.

The DEIS does not take into account the economic impacts on businesses and residents during the construction period. The DEIS should consider the impact on local businesses dependent on foot traffic on Vanderbilt and Flatbush avenues, which are likely to be deterred by dust, noise and street construction. Extensive infrastructure work on Dean Street is likely to adversely impact the operations of local manufacturers who will have difficulty with loading operations. Interruptions to utilities (telephone, water and electricity) are to be expected during construction. Even brief interruptions can have a catastrophic impact on small businesses. Other neighborhood businesses whose operations are environmentally sensitive—such as Ulano, local food processors and artists—will be adversely impacted by dust.

3.3 Community facilities and services

3.3.1 Police protection

Receiving sufficient coverage from police services has been a continuing concern of Prospect Heights residents. In its comments to the ESDC on the Atlantic Yards draft scope of analysis, PHNDC called for an

extensive study of the impact to the NYPD precincts that make up the area surrounding the project site[7]. Although the final scope of analysis published by the ESDC in March 2006 came far short of addressing all the analyses we recommended, PHNDC noted that the scope was stated to include "assessment of the project's potential effect on NYPD response times. [8]"

The promised analysis was in fact not included in the DEIS. Instead, the DEIS states that the NYPD will simply wait for additional demand, and then address any necessary resource additions. The DEIS also describes the NYPD's policy of assigning officers from other precincts to provide additional police coverage during large public events, citing Madison Square Garden and Yankee Stadium as examples. The DEIS therefore finds that no adverse impacts will occur as a result of the project.

This demand-driven argument is unsound and has no place in an analysis of environmental impacts. For example, if, following the construction of the proposed project, the NYPD were to alter its resource assignments to the precincts making up the study area based on "demographics, calls for service, and crime conditions," there would in fact be evidence that adverse impacts *had occurred.* The fact that those impacts were being addressed reactively would provide little or no relief to victims of crimes and quality-of-life offenses.

Further, protocols applied to assign police resources to Madison Square Garden and Yankee Stadium may not necessarily be sufficient to handle the situations that occur when a sports facility operates in close proximity to a residential neighborhood. Safety considerations are one reason why New York City zoning does not permit construction of arenas and stadiums near residential zones. As the project sponsors propose to override those zoning restrictions, PHNDC believes they have an obligation to fully assess any increase in crime rates that may result. PHNDC is aware that the NYPD Office of Management, Analysis and Planning (OMAP) has studied patterns of crime around sports arenas and stadiums, and recommends the EIS revisit this portion of its analysis.

We note the use of crime statistics to support the finding of blight in the Atlantic Yards General Project Plan. The blight study claims that residents of the project footprint experience higher incidence of crime that residents outside of it (even though it acknowledges this conclusion can not be proven by the statistics cited), and hypothesizes the cause as being related to the "blighting influence" of the Vanderbilt railyards. [9] We therefore would have expected the DEIS' analysis of impacts to police service to address a similar blighting influence of the enormous surface parking lot the sponsors propose to construct in Phase I of the Atlantic Yards project.

Because we believe the analysis of police service impacts must be completely revisited, we repeat recommendations made in our comments on the Draft Scope of Analysis:

- The EIS must study changes in patterns of reported crime and quality-of-life offenses in other urban areas where arenas have been built and determine the additional crime likely to occur in Prospect Heights as a function of the arena proposed for the Project.
- The EIS must study other developments of the size and scope of the proposed Project that have occurred in New York City and in other metropolitan areas in the United States with respect to the change in patterns of reported crime and quality-of-life offenses occurring during the construction phases of such projects. The EIS must estimate the impact in terms of additional crime likely to occur in Prospect Heights as a function of the construction phases of the Project.
- The EIS must consider the increase of the resident and worker populations in Prospect Heights that will occur as a result of the proposed Project, and estimate the increase in crime and quality-of-life offenses that will occur simply as a function of population increases.

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[7] *Atlantic Yards Arena and Redevelopment Project: Comments on the EIS Draft Scope of Work,* The Prospect Heights Neighborhood Development Council, October 28, 2005.

[8] *Atlantic Yards Arena and Redevelopment Project: Environmental Impact Statement Final Scope of Analysis,* Empire State Development Corporation, March 31, 2006.

[9] *Atlantic Yards Arena and Redevelopment Project: Blight Study,* Empire State Development Corporation, July 2006.

- The EIS must analyze the current resources of the site's zoned police precinct (the NYPD 77th Precinct). Radio patrol assignments must be studied to identify potential issues in the location of police dispatch relative to the Project site (the 77th Precinct station house is approximately three miles from the Project site). Impacts to response times should be studied given increased traffic both during the day and in the evenings when sports events are held at the arena.
- The EIS must study the NYPD 78th Precinct station house location on Sixth Avenue with respect to impacts during and after construction phases. Specifically, impacts to pedestrian safety and street parking should be studied given the station's proximity to the proposed arena and the proposed narrowing of sidewalks in front of the station house. Impacts to response times should be studied given increased traffic both during the day and in the evenings when sports events are held at the arena. The analysis should use an arena event as the standard for the worst-case condition rather than using averages of response times.
- The EIS must consider the potential for the closure of local streets (e.g., the blocks of Sixth Avenue between Atlantic and Dean, and Carlton between Atlantic and Dean) for security reasons either permanently or during sports events, and determine the effect on police response times.

Finally, we note that the DEIS makes a factual error on page 5-5 in claiming that the 78th Precinct has an eastern boundary of Washington Avenue. The area east of Flatbush Avenue to Washington Avenue south of Atlantic Avenue is contained within the 77th Precinct.

3.3.2 Fire protection and emergency services

The DEIS presents a demand-driven rationale for addressing adverse impacts similar to that given in the previous section "Police protection." Again, we do not find this approach to be sufficient given the unique types of buildings and uses the sponsors are proposing for this site. An analysis that accounts for the conditions that will be created by the project and projects changes required in FDNY resources is called for in order to ensure public safety. Once again, the Final Scope of Analysis promised to study the impact of the proposed project to FDNY response times, but the DEIS does not contain such an analysis.

The DEIS points out that "the proposed project would not *directly* displace any FDNY firehouses[10]," (our emphasis). However, Engine Company 219/Ladder Company 105 is located at 494 Dean Street, in close proximity to the parking entrance and loading dock for the arena. Further, activity in that area during the construction of the project during Phase I is likely to be intense. It seems very likely that the firehouse would experience some difficulty dispatching fire trucks from its garage in emergency situations. However, the DEIS does not address the possibility the firehouse may be forced to relocate.

While the DEIS notes that "the firehouse at 172 Tillary Street houses equipment especially suited for high-rise fires[11]," that firehouse is 1.3 miles from the towers being built in Phase I of the project. Given the sponsors propose to construct the tallest building in Brooklyn—and as only one of sixteen towers—provision should be made to outfit a firehouse in immediate proximity to the project with similar equipment.

3.3.3 Public schools

The analysis of impacts to public education facilities presented in the DEIS finds that adverse impacts to local schools would exist in the second phase of the project. Although the DEIS does not find that adverse impacts will exist after the first phase of construction, we note that the DEIS' analysis shows CSD 15 elementary and middle schools operating at full capacity even after the first phase. The DEIS' baseline figures for student enrollment assume the declining trends in DOE and DCP forecasts. We are not familiar with the assumptions driving these forecasts, so it isn't clear to us why enrollment would decline as the population of the surrounding neighborhoods is rising. We note that should the forecasts prove incorrect, the impacts to schools identified in the DEIS would be much worse than stated.

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[10] *Atlantic Yards Arena and Redevelopment Project Environment Impact Statement,* Empire State Development Corporation, July 18, 2006.

[11] *Ibid.*

Reliance on the DOE forecasts is a particular concern because the DEIS research apparently did not include any direct contact with the administration of the schools studied. PHNDC interviewed the principals at P.S. 9 and M.S. 571, which were reported by the DEIS to be at 76% and 50% capacity, respectively. The principal of P.S. 9 informed us that the school was presently over capacity, and no longer had room for a library for its students. (For reference, the DEIS proposes P.S. 9 accept an additional 172 students.) Likewise, the principal of M.S. 571 also reported no empty classrooms, and no ability to accept additional students. She stated that a windowless storage area was about to be fitted out as a "resource room." (The DEIS proposes that M.S. 571 accept an additional 201 students.)[12]

Not only does the DEIS likely overestimate existing school capacity, its does not analyze the impact of increased class size to the educational experience of the students themselves. The DEIS states that elementary schools within the ½-mile study area will be at 84% capacity in 2010 under the proposed project. Students at these schools today, however, perform on standardized tests at a lower level than students attending schools in neighborhoods outside the study area. The chart below shows "basic" and "basic proficient" scores on the DOE ELA exam for elementary school students in grades 3, 4 and 5 at schools within the study area:

School	"Basic" percent score	"Basic proficient" percent score	Combined percent score
P.S. 9	16	37	53
P.S. 133	9	35	44
P.S. 282	5	29	34
P.S. 11	7	28	35
P.S. 56	15	23	38
P.S. 38	17	40	57
Average	**12**	**32**	**44**

Table 1: ELA results of schools within the EIS study area

"Basic" and "Basic proficient" scores indicate performance below grade expectations. At least one-third, and in some cases more than one-half, of students in these schools did not meet this standard in the 2006 school year; the average combined percent score is 44%.

The chart below shows the same scores for students in adjoining neighborhoods outside of the study area.

School	"Basic" percent score	"Basic proficient" percent score	Combined percent score
P.S. 321	3	12	15
P.S. 261	5	37	42
P.S. 295	6	28	34
P.S. 29	2	13	15
Average	**4**	**23**	**27**

Table 2: ELA results of schools in nearby areas outside the EIS study area

PHNDC notes that the additional students created by the proposed project would be assigned to local schools whose students currently significantly underperform relative to comparable schools in adjoining neighborhoods in Brooklyn. Adding to the population at the study area schools may further impede their ability to help students achieve grade level performance. Atlantic Yards must include a plan to expand the facilities and improve the services of local schools if they are to be expected to absorb large numbers of additional students.

[12] Interviews with Ms. D'Avilar and Ms. Flateau, PHNDC, September 2006.

3.3.4 Libraries

The DEIS references the *CEQR Technical Manual* with respect to impact on existing library facilities in the first phase of the project. Because the population increase of 3.6 percent is less than the CEQR guideline of a 5 percent increase as potentially significant, the DEIS finds that no significant impact to local library services will take place in 2010.

However, the DEIS applies a different standard to the evaluation of conditions in 2016, where a population increase of 10 percent relative to the no-build scenario would exist. The DEIS argues that such an increase, twice that deemed significant by CEQR, would not impact library services because (i) the Brooklyn Central Library is within the study area, and it has a large collection of volumes; (ii) Brooklyn residents can request volumes from other library branches be delivered to their local branch; and (iii) the number of volumes available per Brooklyn resident in the study area already exceeds the Brooklyn average.

The fact that the study area currently enjoys a library well-stocked with books unfortunately does not change the fact that the CEQR guidelines would indicate the population change will cause an adverse impact to service. Besides the lending of books, the DEIS does not consider other services that are provided by the library, such as children's reading programs, that would be required to absorb additional population impacts. Further, the DEIS apparently places no value on the service performed by the librarians themselves, who will have to provide research and bibliographic assistance to a larger number of visitors. Finally, the Brooklyn Central Library serves a community larger than the study area, so population conditions in Brooklyn as a whole must be factored in to any analysis of the sufficiency of resources. In particular, creating a ratio of volumes to study area residents using the Central Library's collection as a numerator is not a valid representation of how the Library's resources are used.

We find that a more detailed analysis of use of the Central Library is necessary, together with a plan to mitigate the adverse impacts that would likely exist.

3.3.5 Other community facilities

In its comments on the Draft Scope of Analysis, PHNDC requested the EIS study the impact of the proposed development on postal service in the area, in particular the impact to the Adelphi Station on Fulton Street. This analysis was not performed.

3.4 Open space

Prospect Heights is blessed with its proximity to Prospect Park with its 585 acres of open space, both passive and active. However, Prospect Park is a specific destination. Residents go to the park with a purpose in mind; meditation, jogging, bike riding, picnicking, sunbathing, playing ball, kite flying. Residents with only a few minutes to spare are less likely to visit the park because the walk is too far. Other open spaces, such as the Dean Street and the PS9 playground which are all asphalt, serve for active games but offer little or no space to sit and certainly no scenic surroundings. The garden on St. Marks is lovely, but is usually locked to passersby except for announced events. The Underhill Playground, when completed, is intended for smaller children, but the space is probably not large enough to share with adults looking for quiet contemplation. What Prospect Heights lacks is pleasant and reasonably quiet passive public space where workers and residents can sit and talk, eat their lunch or have a cup of coffee outdoors. The ratio of this type of space to the area's population is far below the recommended figure. Available tables, benches and planted areas are in very short supply. Several local businesses offer outdoor seating but only for their customers. There are no vest pocket parks in Prospect Heights.

The Atlantic Yards arena design projects adding up to seven acres of open space to the neighborhood but very little of this acreage will serve as the needed type of space. The design also does not draw clear distinctions between public and private open space. There are no garden areas on the perimeter of the mega blocks, no planted medians in the streets that would soften the immensity of this project. The design feels forbiddingly 'skyscraper' urban and out of character with the brownstone character of the existing neighborhood. It also does not address the division that exists between Prospect Heights and Clinton Hill created by heavily trafficked, extremely wide Atlantic Avenue.

Although it is not described in great detail, the Urban Room sounds attractive, but it will be located at the far corner of the neighborhood and will be of use primarily to those who are heading for the arena or the transportation hub at Atlantic Avenue. The largest space offered will not be completed until the end of the second phase of the project—2016 at the earliest. In the meantime construction with its noise and dust and increased traffic will limit even further existing open space amenities. The addition of the projected number of apartments will so increase the population of the area that the ratio of allotted public space will be further diminished. In fact, after the open space in Phase 2 has been created, the number of expected new residents added during of the Atlantic Yards project will result in a ratio of open space per area resident that is smaller than what exists today; as reported by the Council of Brooklyn Neighborhoods, "In the ½ mile radius around the proposed site, the amount of active open space per 1,000 would decrease by 12%, to from .16 to .15 acres per 1,000—well below the recommended 2.0 acres (specified in the CEQR Technical Manual)."[13]

As designed, the large space located in blocks 1120, 1121, and 1129 looks to be enclosed in great part by tall residential buildings which would loom over the interior space and cast shadows on much of the green area at any time of the day. Requiring that people walk into what feels to be an enclosed, possibly private, courtyard makes that space less welcoming and raises visibility and security issues. Residents of the new buildings could object to noise resulting in the cancellation of programs and limitations on the use of the space for the general public. Active edges such as ground floor retail, parking and buildings with active bases do not seem to be included in the design; all would help direct foot traffic toward public space. Therefore, the seven acres will not serve for the casual use of Prospect Heights residents.

3.5 Urban design and visual resources

3.5.1 "Towers in the park" configuration

DEIS finds that the proposed project would be "dramatically different than anything in the neighborhood today" by proposing buildings considerably taller and of a larger scale than anything in the surrounding neighborhoods and by closing streets to create superblocks. PHNDC strongly disagrees with the DEIS' conclusion that this change would "enhance the vitality of the area and foster connections between neighborhoods surrounding the site." Rather than connecting the neighborhoods surrounding the development, the current Atlantic Yards plan will forever insulate them.

We believe that the "towers in the park" design results in a configuration of open space that relegates almost all of what is proposed to the interior areas of the superblock. These areas are not at all likely to be perceived or experienced as "public" by community members. Instead, the space appears to be programmed as a private courtyard of an apartment complex; in fact, the GPP states the space will be privately administered. The DEIS should have examined alternative configurations of the site, which would locate open space to the perimeter of the project.

We believe that the demapping of city streets and creation of superblocks will impede, rather than encourage the passage of pedestrians through the project. The meandering pathways created by the project are an insufficient replacement for the direct connection of city streets. The DEIS should offer an analysis of the origin and destination of pathways and the length of distance traveled versus the travel time by city streets. In addition, the DEIS fails to acknowledge that the pathways that provide passage through the project will be regulated by the developer. At what point in the evening will pedestrians be prohibited from using the project's open space as a thoroughfare?

Claims that the project would enliven the area overall should be balanced by a more detailed look at the streetscape level along the perimeter, which is how residents in the immediate area of Prospect Heights will most frequently experience the project. The DEIS fails to provide a detailed picture though building elevations of the location of loading docks, blank streetwalls, and view corridors. The design of the site, with its tower entrances oriented towards the center of the project, is likely to create dead areas and discourage activity along the perimeter of the project, which may even pose safety risks to residents.

[13] Written testimony on the Draft Environmental Impact Statement, Council of Brooklyn Neighborhoods, September 29, 2006.

3.5.2 Williamsburg Savings Bank building

The DEIS acknowledges that some of the view corridors of the Williamsburg Bank building would be obscured by the towers on the arena block. PHNDC disagrees with the DEIS conclusion that this loss would be compensated by the view of the proposed skyscrapers. The DEIS fails to examine any alternative configurations, for instance those proposed by the Municipal Art Society, to address this adverse impact.

3.5.3 Lighting and signage

The DEIS claims that signage and lighting will be "typical" of retail and commercial blocks throughout the city. Signage and illumination on residential blocks will follow regulations for local retail. These statements should be clarified as they indicate a wide range of possible conditions. More information is needed on how signage and illumination will be regulated on the southern end of the project on Dean Street where the residential and commercial towers sit directly across the street from a low density mixed use M-1 zone.

PHNDC disagrees with the DEIS conclusion that the lighting and signage on the arena block's Atlantic Avenue front will have minimal impact on the surrounding neighborhood. The DEIS fails to address how far the illumination will be visible and what the level of illumination will be, particularly on evenings when games are taking place. Further analysis needs to be conducted on how this large and animated signage would impact traffic congestion and perhaps precipitate accidents.

3.5.4 Existing visual resources

PHNDC disagrees with the DEIS finding that there are no significant visual resources within the study area. Many of the buildings to be demolished are of historic character, including the Wards Bakery which the DEIS has found worthy of NHL designation. The area south of the project on Dean Street between Carlton and Vanderbilt is part of the industrial past of the neighborhood where residential worker housing and manufacturing buildings were constructed in tandem and relate to each other by exhibiting similar massing and architectural character. PHNDC supports the Municipal Arts Society's proposal to integrate the Ward Bakery as part of project as a way of mediating a modern development with the surrounding low rise community.

3.5.5 Construction staging as an urban design impact

PHNDC rejects the GPP's plan for the entire 22 acre site to be leveled at the outset of Phase I, even though construction of buildings on the larger eastern portion of the site will not begin until 2010 at the earliest. The amount of staging area being sought by the sponsors seems unusually large, even for a project of the proposed size of Atlantic Yards. Should the project not proceed as planned or as scheduled, the cleared, secured site would have a far worse effect than the railyards in separating the surrounding communities of Fort Greene and Prospect Heights. One way of addressing the impact of the interim staging area is to require confirmation that Phase II will proceed before permitting the demolition of buildings.

3.6 Shadows

The DEIS does not include information or simulations of any time within 1½ hours of sunrise or sunset, when shadows are their largest. This means that for some locations, the sun may effectively rise up to 90 minutes later or set 90 minutes later. For example, in December, the analysis period ends at 2:53 PM, a very early time to begin ignoring the impact of shadows. This should have been addressed in this study.

The study also ignores the related effect of shadows on private dwellings, and the significant amount of sunlight that would be lost to residents of buildings north of the project.

The study ignores the following public open spaces, despite the fact that their own diagram (fig. 9-1) clearly places them in the shadow sweep:

- Thomas Greene Playground
- the Gowanus Houses open space

- Brooklyn Bear's Rockwell Place Garden
- Fowler Square at Fulton and Lafayette Avenue
- Fort Greene Park
- Edmunds/J.H.S. 294 Playground
- Police Athletic League
- North Pacific Playground and Greenthumb
- Greene Park/P.S. 11 Playground, and
- Hollenbach Community Garden.

It claims, "the proposed project would not have any effect on these resources."

The study similarly ignores the following historic resources, with similarly vague explanations:

- Proposed Park Slope Historic District Expansion
- 522-550 State Street
- The Church of St. Luke and St. Matthew
- Clinton Hill South Historic District
- 2-story frame house at 505 Clinton Avenue
- 2 1⁄2-story frame house at 525-536 Clinton Avenue
- Former Public School 15
- Brooklyn Public Library: Pacific Branch
- The Telephone Building at 547-555 Clinton Avenue
- Four 4-story residential buildings at 548-560 Dean Street
- Ten 4-story residential buildings at 531-549 Bergen Street
- 78th Precinct Police Station
- Peter F. Reilly & Sons Furniture Storage
- Twenty-six 3- and 4-story residential buildings adjacent to the proposed Park Slope Historic District Expansion
- 2-story commercial building at 62-64 6th Avenue
- one 3 1⁄2-story frame rowhouse at 413 Dean Street
- Two 3-story rowhouses at 529 and 531 Atlantic Avenue
- Former Brooklyn Printing Plant of the New York Times
- Brooklyn High School of the Arts, and
- Former Federal Brewing Co.
- Five 3-story residential buildings at 542-534 Bergen Street.

Repeatedly throughout the course of the study, the assertion is made that, while shadows are longest in the winter months, and therefore have their most significant impact during this season, this would not really diminish the attractiveness of the open spaces because inclement weather during the winter already limits the use of these areas. While parks and playgrounds are certainly used less during the winter months, it is unreasonable to dismiss the shadows during this period as unimportant, as it is often during these long winter months that sunlight is the most important, and that a stroll through a sunny, albeit cold, park can

have significant regenerative effects. The most obvious example of this is South Oxford Park, where the where shadow will cover the park for up to five hours during the winter, yet this is not considered a "significant adverse impact."

The assertion is also made that shadows have less impact on "active" recreational locations than those that are considered "passive." In this fashion, the study claims that the shadows covering the field at Brooklyn Tech during the afternoon in the spring, would have no significant adverse effect. The field is most likely to be used in this time period, immediately following school hours, and the shadow will affect the desires of students to participate in sports.

The open spaces created by the project would be, to a very large extent, surrounded by the tall buildings of the project. The will therefore, in addition to being isolated from the surrounding community, be isolated from the sun for large portions of the day. The DEIS claims that "large portions" of the open space would receive full sun for most of the day. A review of figures 9-44 through 9-66 show that this is a gross exaggeration, and that only for a couple hours at midday could any significant portion of light be said to shine on this open space.

3.7 Infrastructure, energy and solid waste

3.7.1 City-wide versus local demands

The DEIS repeatedly describes the "city-wide" impact of this project on infrastructure elements such as water, electrical demand and DSNY load, arguing that on a city-wide or system-wide basis the projected increases would be negligible. While this may be statistically accurate, the true impact of the project will be local and not system-wide. Based on table 11-9, the proposed incrased residential population generated by this prject is 14,406. This figure represents less than a 0.1% increase in the city-wide population (based on a population of 8,000,000). However, this figure also represents an increase of 65% in the local population of Prospect Heights (based on a population of 22,000), which is a significant increase.

There is no discussion in the DEIS as to what the proposed increases in the sewer, water and electrical demands represent in terms of a percentage increase on the local system, or what percentage of increased capacity is represented by the proposed infrastructure improvements. For example, the calculated water demand increase represents what percentage of the local area current demand, and how much new capacity is provided by the proposed water main improvements? Based on table 11-4 there will be an increase of approximately 1.3 mgd due to the project by 2010, which represents a twelve-fold increase from current usage rates, and table 11-9 indicates a 30-fold increase by 2016 to 3.2 mgd. The proposed water main plan does not specify how much additional capacity will be provided and how much of a buffer supply is projected.

This project could create additional secondary infrastructure demands such as an additional firehouse or police station or increased subway service. Were these possibilities factored into the demand calculations for power, water and sewer?

There is no discussion of the impact of other ongoing and proposed developments within the local area of downtown Brooklyn on the same infrastructure elements. Will the aggregate impact of al other developments adversely impact the proposed improvements and upgrades associated with this project?

3.7.2 Infrastructure providers

There are no direct comments from infrastructure providers such as DSNY, ConEd, KeySpan or DEP relative to proposed required infrastructure improvements. Are the improvements and service increases cited fully committed and funded? Are they also scheduled to support the current build schedule?

There are no discussions at all of infrastructure improvements necessary as regards the natural gas supply except for a general statement that localized upgrades in transmission lines and facilities. The discussion of electrical demand states that ConEd has "proposed" upgrades to substations and primary feeder cables (22kv network). Recently the local area has experienced problems with the electric supply and has had several transformer expolsions and fires and subsequent blackouts on Vanderbilt Avenue, St. Marks

Avenue and Bergen Street. A ConEd supervisor admitted to the writer that at least twenty-five transformers needed to be replaced within the local distribution network. How does the anticipated demand affect this situation? When are the "proposed" upgrades scheduled to be implemented?

There is no discussion relative to whether the project will incorporate emergency electrical generators and if they will be diesel fired or natural gas units. How many fuel tanks of what capacity will be required?

3.7.3 Communications

The DEIS does not analyze impacts on communications services, such as telephone service or cable television.

3.7.4 Solid waste removal

The discussion of solid waster generation assumes that the projected six tons daily waster generated by commercial establishments will be picked up by one truck. In reality each retail establishment may have a different carter and therefore it is possible and highly probable that there will be significantly more than one truck per day to service the commercial establishments; five to six trucks per day seems much more realistic.

3.8 Traffic and parking; transit and pedestrians

3.8.1 Safety

3.8.1.1 Permanent roadway closures and changes

The plan to make Pacific Street between Flatbush and 4th Avenue a two-way street (all Flatbush Avenue northbound traffic on Fourth Avenue will be redirected, turning right onto Pacific Street and then north on Flatbush) will create enormous new traffic volume. The south side of this block is heavily residential. It can be assumed that noise, pollution and pedestrian vulnerability will increase very significantly for those who live on this block. There is also a Brooklyn Public Library branch on the southeast corner of Fourth Avenue and Pacific. Library patrons, many of whom are school students, will face newly hazardous pedestrian conditions. The DEIS offers no mitigation for this impact.

3.8.1.2 Bicycles

The DEIS acknowledges not only that increased traffic volume will impact cyclists but also that existing traffic will be diverted onto streets currently used by cyclists. No mitigation is offered. It should be a priority to not only protect the safety of cyclists but improve conditions for cyclists so that more people can choose this mode of transport.

3.8.1.3 Unmitigated impacts

The impact analysis (page 12-3) describes a situation where the majority of intersections analyzed in the study would suffer from significant adverse impacts. It goes on to state that "additional measures to further address all unmitigated significant adverse traffic impacts will be explored between the DEIS and the FEIS." It is a serious shortcoming of the DEIS this it makes no effort to offer mitigations. For the sake of the health and safety of local residents and those who travel through the area these must be identified in the FEIS.

3.8.1.4 Accidents near the arena

The DEIS states that the project sponsor is committed to working with NYCDOT and NYPD to ensure that needed resources are available to place police and traffic control offers at key intersections when major events are scheduled for the arena. The EIS should provide an explanation of what this means. We would expect the developer to be responsible for the expense of these resources. The cost should not fall on the taxpayer.

3.8.1.5 Key intersections

A 4-15% increase in traffic is anticipated at the intersection of Atlantic and Flatbush Avenues (page 12-4). The suggested mitigations are wholly inadequate (e.g. high visibility crosswalks) to address the serious vulnerability of pedestrians at this intersection (see pg 12-15 for accident statistics at this location, including 11 pedestrians or cyclist killed or injured here in a three year period). We recommend a comprehensive range of solutions, including, but not limited to, a raised central meridian on Atlantic Avenue to provide a haven for pedestrians caught half way across the street when the lights change; an underpass connecting the north and south sides of Flatbush Avenue and also providing access to the subway station and LIRR station; a pedestrian bridge (located at the eastern edge of the arena) to enable pedestrians to safely cross above Atlantic Avenue.

3.8.2 Parking

3.8.2.1 Loss of on-street parking

To offset the stated loss of 180 on-street parking spaces in the study area as well as the likelihood that drivers to the arena would park on the street if spaces were available (pg 12-55), we propose that a residential parking permit system be instated at the earliest possible opportunity – certainly before construction begins. This should be a 24-7 system that prioritizes on-street parking for local residents. Existing models are widespread including ones in London, England that address similar situations.

3.8.2.2 Police Parking

The DEIS also identifies the loss of twenty-four parking spaces for police vehicles on Sixth Avenue. These spaces must be replaced—preferably with a permanent police parking garage built and paid for by the developer—or they will inevitably reduce the pool of parking spaces available to local residents still further. Additionally, the DEIS does not mention the significant impact under existing conditions caused by the presence on local streets of the personal vehicles of police officers working at the 78th precinct. We therefore also recommend that whatever parking facility the developer provides for official police vehicles also be large enough to allow for these personal vehicles.

3.8.2.3 Alternate side of the street parking

The DEIS offers no analysis, or even acknowledgement, of the existence of alternate side of the street parking restrictions (pg 12-62). Since many local residents own and use cars but do not drive to work on a daily basis, this represents a major oversight. These restrictions have a dramatic impact on the availability of on-street parking, effectively reducing it by up to 50%. For car owners who don't plan to use their cars on a specific day, parking is available on one side of the street only while the other side is off-limits for street cleaning. Only the minority of car-owning residents who are at home during the day are able to avoid this problem. Thus the statistics provided in the DEIS about the availability of on-street parking are seriously flawed.

3.8.2.4 Parking patterns of local residents versus ticket holders

The 6-7 PM time period was not analysed in the DEIS in spite of the fact that this is when many local residents return home from work. It coincides with a portion of ticket holders arriving and parking in advance of the game's start time in order to eat dinner locally, therefore, it is a period of overlap that goes unmentioned. Additionally, although the DEIS examines the 7-8 PM peak hour on game days, it does not take into consideration the impact that pre-game on-street parking by ticket holders will have on local residents. Many residents who work later into the evening and do not return home until after 7 PM will not be able to find parking spaces until after the 10-11 PM post-game peak hour when ticket holders will presumably have left the area. This represents a significant burden on local residents that the DEIS fails to address let alone offer to mitigate.

3.8.2.5 Transportation planning assumptions

Included in this section is the assumption that non-basketball events would attract fewer spectators and therefore fewer vehicular trips. It is equally plausible, however, that attendees will judge their chances of finding local parking to be greater at non-basketball events (because the audiences are smaller) and will therefore be more likely to drive to the arena, not less. The DEIS should be offering proof of its arguments, not merely presenting assumptions.

3.8.2.6 Arena employees and event staff

The DEIS anticipates that arena employees, players, coaches, team staff, and other non-spectator visitors to the arena would generate trips outside of the immediate pre-game and post-game periods (pg 12-32). We agree with this assumption. But the DEIS does not comment on the parking habits of this group. We would like to see the developer and/or management of the arena mandate that these vehicles park in on-site parking facilities only so that they do not compete with local residents who must rely on on-street parking.

3.8.3 Other traffic issues

3.8.3.1 Traffic study area

It is immediately apparent that the traffic study area is far too small. It fails to include the Manhattan and Brooklyn Bridges (including their approaches from the north, for example in Manhattan, where traffic congestion on both Canal Street and Center Street is already extreme and deserves close attention). As local residents who drive, take buses or taxis along these routes know only too well, congestion exists at all times of the day and well into the night from as far south as Flatbush and Church Avenues all the way to Manhattan, in both directions. It doesn't include either the BQE or the Gowanus Expressway. As a result, there is no analysis of the traffic impact on these busy highways from vehicles bound for the arena and originating in Queens or Staten Island. It also doesn't include most of Park Slope (Union Street is the southern cut off to the study area). And because Ocean Parkway is not included, there is no analysis of the impact on Park Slope of traffic coming from the southern neighborhoods of Brooklyn.

The DEIS describes the closure of Fifth Ave between Flatbush and Atlantic Avenues but fails to present any mitigation for this closure. Where will this northbound traffic be redirected to? How will this effect access to the Pathmark grocery store for traffic approaching from the south? How will this effect local traffic from, for example, Park Slope to Fort Greene that currently uses this route to travel between adjacent neighborhoods?

3.8.3.2 Traffic generated by new retail businesses

In its 2016 travel demand forecast (pg 12-65), the DEIS claims that its forecast is conservative because it assumes no credit for the travel demand from the existing Modell's and P. C. Richards stores that will be displaced if the project is built. However it fails to address the fact that much more new retail will be added at the site than will be removed by the closure of these two stores. There is no discussion of the additional travel demand this new retail will create.

3.9 Noise

In 2005 the City of New York revised its noise code in order to establish clearly that public policy was to reduce the ambient noise level in the city. The code states clearly that it "is the public policy of the City that every person is entitled to ambient (noise) sound levels that are not detrimental to life, health and enjoyment of his or her property."[14]

The DEIS states that "noise from crowds attending events in the arena would not be expected to be a significant noise source that would affect ambient noise levels;" also "people attending events would not be expected to congregate in any significant numbers on Dean Street or other relatively quiet streets." No

[14] Declaration of policy #24-202, The City of New York, 2005.

justification is presented for these statements. Events would attract large amounts of people that do not live in the neighborhood. Significant tailgating and congregating would be expected before events. How would this be monitored? Would there be a "zero tolerance" policy for tailgating in residential neighborhoods vigorously enforced by NYPD? The document states, "Any crowd noise surrounding the arena would be expected to be masked by noise from vehicles on adjacent streets." The vehicle noise referenced has been noted by the DEIS as an adverse impact. The fact that an impact from vehicular noise would exist is not a justification for the EIS to avoid identifying mitigation for additional crowd and pedestrian noise.

The DEIS uses a traffic noise model designed to measure noise on highways. not Brooklyn streets. The model does not take into account the nature of city traffic like honking horns, reversing trucks, sirens, motorcycles, potholed streets, music from car radios, never mind the rowdy pedestrians. It also does not account for the consequences of sound bouncing off of buildings.

Many areas will encounter the cumulative affect of both operational and construction noise. The analysis of operational and construction noise should be combined across each phase in the project.

Table 15-9 lists 2010 build noise levels. Several numbers need explanation. Receptor 3 indicates a 3.1 increase during weekday afternoon and a 6.8 increase in weekday evening noise levels. Receptor 5 indicates a 3.5 increase in late night weekdays, and a 3.7 and 3.1 increase during Saturday midday and night. It is not clear what is causing the increases. The streets referenced are quiet, residential blocks and this increase in noise will greatly reduce quality of life on these blocks. Further mitigation may be required.

The DEIS notes that mechanical systems and equipment (e.g., HVAC systems) will have a noise impact but the studies are only underway. The EIS must include these studies, and propose appropriate mitigation for adverse impacts. Like parking garage emissions, these systems should be located in coordination with the proposed projects neighbors.

In proposing double-glazed windows and air conditioning units as mitigations for noise impacts, the DEIS appears to suggest that residents near the project site stay within their homes for the duration of the construction, and after the buildings become occupied. Quiet playgrounds, sidewalks, gardens, roof decks and stoops are an essential part of the character of Prospect Heights. The GPP should take steps to insure they stay that way. Air conditioning units and double-glazed windows are a short-term solution and should not be considered a comprehensive "mitigation." In addition air conditioners cost money to operate, and in an area that values its historical character, they can also be expensive to install properly.

Further study must be made as to other ways to counter noise produced by the project. The CEQR states that the first option should be to reroute the traffic that is causing the significant impact. Traffic plans that draw traffic noise away from residential areas should be put in place. Entrances and exits of parking garages must be moved to draw traffic away from quiet streets. We recommend that, in addition to temporary landscaping around construction sites, significant, mature trees be planted on adjacent streets, including the entirety of Dean Street from Sixth Avenue to Vanderbilt, Atlantic Avenue from Flatbush to Vanderbilt, Vanderbilt Avenue from Dean Street to Atlantic, Pacific Street between Sixth and Carlton, and other residential areas most affected by noise impacts.

Finally, PHNDC insists that construction should not start before 7:00 AM or continue after 7:00 PM during the work week and should be discontinued on weekends and on locally-observed federal and/or state holidays. The use of "hush houses" should be required around any stationary equipment to shield noise at its source. All construction equipment must be equipped with noise attenuation devices, such as mufflers and insulated engine housings.

3.10 Neighborhood character

3.10.1 Issues concerning DEIS assessment of Prospect Heights

The DEIS states, "In terms of geographic location, Prospect Heights is the neighborhood most closely associated with the proposed project." PHNDC would like to take the opportunity to point out to the ESDC that the majority of the proposed project would be *in Prospect Heights.* Further, the floor area of the

buildings to be constructed is roughly equal to 85% of the brownstone rowhouses in Prospect Heights.[15] These basic facts indicate that the Atlantic Yards project, if built as proposed, would likely become the defining feature of the character of this neighborhood, not, as suggested by the DEIS, an isolated development whose influence extends only to immediately adjacent blocks.

The DEIS places much faith in the ability of zoning and historic district designations to protect surrounding neighborhoods from overdevelopment precipitated by the proposed project. However, the Prospect Heights Historic District is a National Register Historic District, not a New York City Landmarks Historic District. Unfortunately, the National Register designation does not offer any protection from the effects of development in altering the historic character of the neighborhood. Having the New York City Landmarks Preservation Commission designate the rowhouse blocks of Prospect Heights as a Historic District is an important mitigation against the effects of overdevelopment that is currently being pursued by PHNDC, but is as yet unrealized.

The justification presented for the DEIS' finding that the area proposed for development by the project sponsors would remain relatively unchanged in the no-build scenario is not convincing. Prospect Heights is in fact undergoing a period of intense development that began with the renovation of the Daily News printing plant into the Newswalk building in 1999. There is no reason to believe this trend would not continue, even on the proposed project site, as long as demand for residential units in Brooklyn remains strong. The best illustration of this argument is perhaps the plan submitted by Extell Development in response to the M.T.A.'s request for proposals in May of 2005: clearly, interest exists among developers with means to build new projects in northern Prospect Heights. Had this area not already been established as being viable for large-scale residential development, we doubt the Atlantic Yards developer would have proposed its project in the first place. The Atlantic Yards proposal simply can not be presented as the only option for the development of the Vanderbilt Yards and nearby areas.

Once one accepts the fact that the Atlantic Yards project would be predominantly located in Prospect Heights; that the historic neighborhood to the south has limited protection against overdevelopment; that there is presently a development boom in the area; and that Atlantic Yards is not the only option for Prospect Heights' northern blocks, it is then necessary to look critically at what is being proposed for the site in terms of its relationship to the current character of Prospect Heights to determine if that character is in danger of being compromised. We will simply summarize the areas identified in the DEIS as being relevant to an evaluation of impact on neighborhood character.

- *Land use:* The proposed project will introduce new uses incompatible with existing City zoning, as well as a residential density heretofore unknown in the United States.
- *Urban design and visual resources:* The project will obstruct views of a landmark building north of Prospect Heights.
- *Cultural resources:* The project proposes to destroy two buildings deemed of historic interest.
- *Socioeconomic conditions:* The demographic profile of the neighborhood following the completion of the proposed project in 2016 would be significantly less diverse than it is today, as no provision is made to provide housing to the one quarter of area residents earning below $20,000 per year.
- *Traffic and pedestrians:* The project (by the DEIS analysis) would create adverse impacts at 96 intersections, with unmitigated impacts at more than half of them.
- *Noise:* The project would result in noise impacts that exceed the DEP guidelines for urban areas.

The DEIS asks us to believe "the probable impact of the proposed project on neighborhood character in the surrounding neighborhoods is expected to be largely beneficial." We are not sure who is doing the expecting here. We believe a reasonable person would conclude that the current residents of the neighborhood in question would be likely to find the changes to its character, based on the above acknowledged impacts, to be significant and adverse with respect to current conditions. It may be possible

[15] *Can it work for Brooklyn?* Municipal Art Society of New York, June 15, 2006.

that the authors of the DEIS have a subjective preference for the design, architecture and uses of the proposed project, but it should not be their opinions that are studied by the DEIS. Given that the perception of neighborhood character is subjective, the DEIS should assume the perspective of the current residents of Prospect Heights, who presumably live in the neighborhood because of their affection of its character today. The DEIS offers no evidence that these residents will prefer the conditions that it identifies as being created by the proposed project.

3.10.2 Project design

The project sponsors claim the proposed project will unify the neighborhoods of Prospect Heights, Fort Greene and Boerum Hill. However, there is no evidence provided in either the General Project Plan or the DEIS that supports this assertion.

One would expect that a project claiming to integrate the surrounding neighborhoods would incorporate many aspects of their character, such as continuous street walls, public parks and playgrounds, and accessible through streets. Instead, the Atlantic Yards plan presents a "towers in the park" design strategy that has been discredited among urban planners for decades. This approach involves the demapping of local streets in order to create superblocks with no through access. Rather than connecting the neighborhoods surrounding the development, the current Atlantic Yards plan will forever insulate them. The residential towers do not form the continuous street wall necessary for the retail applications that will create truly lively street life. Instead, urban design experience indicates the isolated towers are more likely to create dead areas of limited activity, which may even pose safety risks to residents. The design of the Atlantic Yards project is therefore fundamentally at odds with the character of both the residential streets and the commercial thoroughfares near the proposed site. It introduces new, but undesirable, design elements into the fabric of the surrounding communities, especially Prospect Heights.

Further, independent research commissioned by PHNDC indicates that the majority of neighborhood residents are not likely to see the addition of an arena and corporate office space as enhancing the character of the neighborhood.[16] This view is consistent with the New York City zoning prohibition on arenas in proximity to residential neighborhoods.

Finally, the surface parking proposed for Phase I of the project is utterly inconsistent with any application in Prospect Heights today. Instead of being consistent with the objectives of the proposed project, the interim surface parking lot would appear to be a blighting influence on the neighborhood.

3.10.3 Potential of the project to influence future development in Prospect Heights

The project would introduce a significantly increased residential density into a neighborhood currently underbuilt with respect to the zoning that currently exists. The neighborhood currently lacks protection from a City historic designation that would protect its existing structures. There is a significant level of interest among developers in starting new projects in Prospect Heights. PHNDC believes that the Atlantic Yards project would have significant potential to influence other development in the neighborhood which may further erode its existing character.

Of greatest concern is the potential for existing properties in the M-1 zones (but not within the proposed project site) to be converted to parking facilities, either for residents of the apartments to be built, or for visitors to the planned arena. Parking facilities are allowed within M-1 zoning, but the number of these facilities in Propsect Heights today is limited by a relatively small demand. The pressure to redevelop property for parking applications following Phase I of the proposed project would likely be great, and an increase in the number of parking lots or garages would have a significant negative effect on the character of the neighborhood. This impact can only be mitigated through changes in zoning that are not proposed by the DEIS.

[16] *Prospect Heights Neighborhood Survey Summary Report,* Pratt Institute Center for Community and Environmental Development, October 2004.

3.11 Construction impacts

3.11.1 Project goals, project phasing and the construction plan

Forest City Ratner's proposed Atlantic Yards project is a complex, large-scale development, which includes an arena, the relocation of the LIRR tracks, and large amounts of underground parking as well as sixteen high-rise buildings. The construction plan is a product of the scale of the project as well as the nature of the project details, and as such the limitations the DEIS describes in mitigating the impacts of extended exposure to construction on the surrounding neighborhoods are linked to the project sponsor's decision to propose the current plan. The impacts described are substantial and either not mitigated or inadequately mitigated.

The phasing of the project is a complicating factor in the analysis of the construction plan. As the project is currently proposed, the second phase of the development has no concrete, enforceable time-line. That means there is real potential any "temporary" alterations to the 2nd phase footprint for the purposes of construction will remain unchanged for a long time after the projected ten year final build-out, if not permanently. The construction timetable currently proposes demolishing all existing buildings in the footprint in order to create three construction staging and "interim" surface parking lots. Two buildings being demolished in the phase 2 footprint during phase 1, (the Ward Bread Bakery and the LIRR stables), are acknowledged by the DEIS to be eligible for the National Historic Register. Even so, the DEIS states that the existing "blighted" area inside the footprint will be replaced with construction activity. The DEIS fails to note that the construction activity for phase 1 is temporary, and that the "interim" surface parking lots may be permanent. The FEIS needs to analyze the impact of surface parking as a possible permanent presence in the footprint. As a point of comparison it should study surface parking areas of the same scale, in the same type of locations, and providing the same type of service near arenas for their impacts across all relevant topics in the DEIS including neighborhood character. It should relate the surface parking to the stated project goals of tying together neighborhoods, providing publicly accessible open space, etc. There is no justification for blighting areas inside and outside the footprint with construction plans incompatible with the stated goals of the project.

Other large-scale construction projects in the city, like the New York Times headquarters currently under construction, use far smaller construction staging areas. Many, like 7 World Trade, shut down one street lane adjacent to the project site in order to create construction staging and temporary parking. Here the staging areas currently planned for the project appear to be designed more to create strategic vacancy, with the project as a solution to that problem, than for any real construction need. There is cost involved, but the project's popularity will benefit from the preservation of existing buildings, several of which can easily be used for staging, storage and construction offices, then converted to housing if left standing just as they are.

It is critical that meaningful public sector oversight occur in a project of this sort. The project sponsor has understandably structured the general project plan and construction plan based on its own economic incentives. It is unclear from the DEIS what standards are used to assess relative imperatives in mitigating construction impacts when the solutions of those impacts may conflict with those economic incentives, or with each other. The DEIS does not demonstrate the project sponsor has evaluated all of the options at its disposal to design a construction plan that alleviates construction impacts most comprehensively. It is clear that an independent body with testing and enforcement capabilities must over-see the relationship between future changes to the general project plan and the construction plan as well as the construction plan's implementation. This body should have local representation from the communities impacted by the construction. All testing done to insure the project sponsor is following established environmental and safety guidelines should also be executed by an independent body.

The state is creating a platform for the kind of development it wants to see in the proposed footprint by overriding existing NYC zoning and land use in a number of ways. The DEIS inconsistently argues in places that the interim parking lot on block 1129 is compatible with existing land uses and in other places states clearly it is not. The existing zoning does not allow staging or surface parking in any of the three sites where they are being located. The surface parking and staging being created at Dean Street and 6th Avenue is being placed on top of an existing residential zone and immediately adjacent to the Swedish Baptist Church National Historic District. The currently M-1 zoned buildings including the LIRR stables on block 1120 are being demolished to create surface parking and staging there. And the entirety of the M-1 zoned

block 1129 including the Ward Bread building, (like the LIRR stables found eligible for the National Historic Register), is being demolished in order to create a surface parking and staging area.

The fact that current zoning does not allow the kind of surface parking and staging areas the construction plan currently contains is one good reason the DEIS should assess the impact of those land use changes on the neighbors of the footprint with great care. It must use a fine and current filter to establish what land uses are near the footprint. Even the filter of current land use is not adequate; as the DEIS notes, individuals relate to noise in different ways. This is true of businesses and institutions as well. Dean Street addresses are exposed to all three staging and surface parking areas, direct construction impacts as well construction traffic. The DEIS finds no long term construction impacts despite the fact that Dean Street between 6th and Carlton Avenues is clearly a noise sensitive zone with a mix of residential and institutional uses, (a Church and a foster home), as well as Dean Playground. A considerable portion of the block is part of the Swedish Baptist Church Historical District. This area is not compatible with long-term construction impacts, especially noise and construction traffic. Likewise, the Newswalk building with its north face running along Pacific Street is a residential building exposed to long-term construction impacts certain to be exacerbated by a construction plan that draws much of the construction traffic during phase 1 development passed it on Pacific Street. The DEIS also finds no likely construction impacts on Dean Street between Carlton and Vanderbilt Avenues because it describes that area is primarily manufacturing. However, in the analysis and all maps included in the DEIS, four residential buildings on that block have erroneously been switched to manufacturing or commercial, (#586, #588, #590 and #638 Dean St.), and the analysts have also excluded the creative sector which fills at least three of the manufacturing buildings, (#610, #636, and #646 Dean St.) The DEIS acknowledges activities that require concentration are sensitive to noise impacts, which suggests the creative sector is particularly vulnerable. This is also true because the creative sector, with its art and recording studios as well as its galleries is exposed to construction noise for longer periods during the day due to prolonged work hours. Finally, for manufacturers the DEIS fails to study the ability of these businesses to access their facilities as well as to load and unload. How will they do the phases of construction that involve lane closures?

The depth of the construction impacts are understated and under analyzed. As an example, in a serious oversight Pacific Street and Carlton Avenue are not included in the construction impact analysis. The DEIS describes a strategy to mitigate construction traffic impacts which involves drawing most construction deliveries in phase 1 onto block 1129 to wait for scheduled times on the arena block. The DEIS states that because the traffic is entering the construction staging area from multiple locations, (Vanderbilt, Atlantic and Dean), the traffic impacts will not have significant adverse impacts, but provides no argument to support that conclusion. To the contrary, the DEIS points out the large amount of construction traffic there will be, and multiple entrances may simply spread the impact into inappropriate places like Dean Street and Carlton Avenue. Worse, by placing the staging area for the arena on block 1129 the plan may draw construction traffic through currently quiet Dean Street or Carlton Avenue to reach the construction staging area, and then send it back passed currently quiet residential Newswalk to reach the Arena, doubling the geographic spread of the construction traffic impacts. And truck exit routes from the site are not described. Construction impact analysis of Pacific Street between 6th and Carlton Avenues will show the consequences of the construction traffic plan on the residential Newswalk building located there. It is generally most efficient to place staging as close to, if not in the site under construction. Construction traffic should be drawn away from neighbors and not passed them two to four times.

The quality of life residents and artists as well as the functional ability of businesses and institutions near the construction site must be at the heart of a construction plan of this scale and duration. Extended hours, weekend work, and nighttime work will adversely affect neighborhood character for the length of the construction period. Our public and our private outdoor spaces -- Dean Playground, South Oxford Park as well as our stoops, sidewalks, back gardens and roof decks will be affected by both noise and dust. This will not just affect the quality of life, but also real estate values. Dust must be monitored during construction as well as demolition. The noise mitigations proposed – double glazed windows and air conditioning – do not replace the loss of peace outdoors, or replace fresh air blowing in through an open window. In addition, the mitigations do not include the operational costs of air conditioning or the substantial structural changes to buildings that may be necessary to accommodate air conditioning properly. Construction barriers will encourage crime and graffiti.

3.11.2 Noise and air quality during construction

The 10-year construction period will be significantly disruptive to the neighborhood character, community facilities, open spaces and overall quality of life of the local residents. Numerous adverse impacts in the form of unacceptable amounts of noise & the degradation of air quality are outlined in the DEIS. The mitigations proposed by the project sponsor will reduce the impacts of construction, but the total absence of a program of enforcement gives one pause and ultimately undermines the mitigations.

The issue of air quality degradation can be linked to three main issues in regards to the project and its impact on the community. These issues are equipment emissions and general construction, traffic related emissions and demolition related emissions.

The sponsor has outlined several standards in regard to emissions generated by equipment that are to be recognized favorably. These include: diesel equipment reduction, the elimination of generators in favor of electric engines, and the exclusive use of ultra low sulfur diesel fuel in conjunction with tailpipe reduction technologies. All of these measures are good as long as the adherence to them is enforced. It is not explained in the DEIS that there is a program of enforcement and one is curious as to how such measures will practically be implemented.

The traffic on site will be limited to a speed of 5 miles per hour to avoid the redistribution of dust and vehicles would be required to turn off their engines after three minutes of idling. Again, these are good measures, but their enforcement needs detailing.

The EIS states that "*Although concentrations of particles with an aerodynamic diameter of less than or equal to 2.5 micrometers (PM2.5) may increase by more than the applicable 24-hour and annual average guidance thresholds in areas immediately adjacent to the construction activity, the PM2.5 threshold exceedences were predicted to be limited in extent, duration, and severity*." This explanation does not offer specific enough information about the source, extent, duration or severity of the emissions of PM2.5 particles. It is of concern that areas immediately adjacent to the site will experience an exceedence of these particles and one is left to imagine what real health impact exposure might lead to.

In some instances the projected level of noise & air pollutants, though supported by the sponsor's research, are somewhat suspect. This includes the curious conclusion that the 24 hr average PM2.5 concentrations may exceed the guidance threshold at some ground floor residential location immediately adjacent to the construction activity… only on one single day of the entire construction period. This after offering up the explanation that the annual average of PM2.5 concentrations may exceed the thresholds of some ground floor locations immediately adjacent to the construction activity for one year. The effects of this on one's health is still not clear and is cause for concern for residents located at the above-described areas. It is also concerning that the DEIS draws the conclusion that this condition poses no significant adverse impact on the air quality during the project when it clearly violates a standard identified by EPA.

The potential release of hazardous materials during the demolition and construction process is specifically mentioned in the DEIS as related to the potentially contaminated sub surfaces of the site. The DEIS stated that by following "a variety of remediation and site-safety measures during excavation no significant adverse impacts related to hazardous materials would be expected to occur…These measures include development and implementation of a construction health and safety plan and community air monitoring plan during excavation." This issue is not fully explained in the DEIS and requires a more detailed explanation. What is the 'community air monitoring plan, how is it conducted and how are local residents to be made aware of the current conditions of the air quality and the release of potentially hazardous materials? The construction health and safety plan should be included in the DEIS and should be made public for evaluation.

The demolition process must be carefully monitored and every preventative measure to limit the release of particulate matter must be programmed and enforced. Special attention should be taken with the identification and demolition of buildings containing asbestos. Asbestos abatement is clearly described in the DEIS and would be the first part of demolition. As New York City regulates the specialty tasks related to asbestos abatement, we need the sponsor to ensure that the process is monitored and the regulations enforced. Missing from the DEIS is the explicit description of how the asbestos abatement process is will be monitored and enforced.

Also related to demolition are the identification of such measures as using solid temporary walls and overhead protection to limit the dispersal of building materials, as well as the wetting of materials for dust suppression. The DEIS does not specify that water would be used in the wetting process. A declaration that water would be the wetting agent instead of an oil or chemical product should be made. Also of concern to air quality is the demolition of buildings that may contain lead- based paint. The DEIS states that an exposure assessment would be performed to determine appropriate dust control measures to manage lead based paint but it does not specify when this exposure assessment would take place and what it would consist of. It is of concern that assessments take place before and during the demolition and that every possible measure is detailed, programmed and taken in the demolition of buildings containing lead based paint.

The issue of traffic and parking are of substantial concern in nearly every aspect of the project's impact on the local area. They are of particular significance to the issues of noise and air quality. It is clear that throughout the length of the 10-year construction process the traffic congestion will significantly impact the quality of life in the community. Dean Street and Pacific Streets will be particularly affected and will suffer from some of the highest levels of emissions exposure due to the substantial truck and vehicular traffic that is guaranteed to clog the street on a nearly daily basis. Much of the traffic will be due to construction workers commuting and scheduled construction deliveries.

It is described in the DEIS that in various areas in Brooklyn, the auto share rate for large construction project workers ranged between 43 and 60 percent, with an overall average of 55 percent. As described in the DEIS and based on the Jay St, Marriot hotel project, there is an average vehicle occupancy of 1.89 construction workers per vehicle. In table 17 – 1 which gives the numbers of estimated workers and deliveries to the site during phase 1 as exceeding 2000 for a period of 1.5 years and the number of deliveries exceeds 300 for a period of over 2 years, with the exception of one month. Using these numbers the site can expect over 1000 worker vehicles and 300 deliveries daily to enter and leave the site. This is far greater than the estimated 800 parking spaces that will be made available on site at the peak period and suggests that 200 cars may be forced on to local streets. The plan for deliveries creates more traffic impact on surrounding communities, not less.

Also mentioned was the fact that the Marriot Project sponsors subsidized parking while the Atlantic Yards project sponsors will not. In the DEIS the sponsor concluded that an unsubsidized lot would discourage workers from driving to work, but it is of great concern to the neighborhood that the unsubsidized lot will have the impact of encouraging workers to park on neighborhood streets further congesting the streets and contributing to traffic noise and vehicular emissions at the local level. A more effective technique to discourage workers from driving to the site might be to provide them with subsidized metro cards or transit checks. Additional efforts to relocate the worker's vehicles away from local streets would include the subsidizing of the off site parking lot.

Taking onto consideration the expectation that the highest level of construction activities would take place between the third quarter of 2008 and the second quarter of 2009 during which time, one could estimate that 733 construction worker vehicles would arrive the hour before (6 to 7 AM) and depart the hour after (3:30 to 4:30 PM) the regular day shift. This represents a significant adverse traffic impact on local air quality and vehicle related noise.

The DEIS states that *"Overall significant adverse traffic impacts during construction were identified for 12 intersections in proximity to the project site and seven outlying intersections. …all significant adverse traffic impacts identified at the outlying intersections would be mitigated by the early implementation of proposed mitigation measures. However, certain significant adverse traffic impacts identified at 10 intersections adjacent to the project site would remain unmitigated".* This information is unambiguous in its description of the traffic congestion that will plague the neighborhood and produce large quantities of unhealthy emissions as cars idle and slowly make their way through the area on a daily basis for the duration of the project. It is of great concern.

Research on the part of the project sponsor yielded significant information on specific sources & durations of noise as well as identifying several techniques for mitigating adverse noise impacts, however, the DEIS does not provide a program of enforcement and therefore lacks sufficient assurance that such techniques will be adhered to. The control measures proposed to reduce noise are identified as source controls, path controls and receptor controls. In addition to these, the sponsor has presented a likely working schedule

along which noise can be assumed to follow. While this methodology intends to be an effective solution to the problems of construction related noise, it also contains significant loopholes, allows for generous exceptions, and most disturbingly provides no explanation of how enforcement will be integrated into the construction program.

Source controls reduce noise at their source or during sensitive time periods- this includes: requiring all contractors & subcontractors to properly maintain their equipment & have quality mufflers installed. It also would include the requirement that all trucks at staging areas except for cement mixers turn off their engines while they are waiting. Vehicular speed on site is also a factor and is proposed to be limited to 5 miles per hour. How will such measures be enforced, and by whom? Will an equipment inspector monitor the use and follow up on the maintenance records of equipment? Will someone be at the staging and waiting areas directing drivers to turn off their engines?

Path controls place noise-absorbing barriers between noisy equipment and sensitive receptors, such as residential streets. The sponsor has committed to locating noisy equipment away from sensitive areas and shielding the areas with 8" – 16" barrier walls. This is also a good element of noise mitigation, however, locating generators and other noisy equipment within the 20" sunken holes of the foundations sites before they are completed can only be interpreted as an extremely temporary form of mitigation. It is also clear that much of the construction equipment will be necessarily used at it's point of application, regardless of if that area is near a sensitive receptor location or not. Further mitigation through the use of mufflers on or as close to the equipment as possible should be incorporated along with barrier walls, or perhaps multiple barrier walls. Further explanation of the use of noise curtains and equipment enclosures should be detailed and again, some enforcement program should be outlined for the guarantee of maximum noise abatement through path controls

Receptor controls include the installation of double glazed windows and air conditioning units in the mitigation of sound levels at locations in sensitive areas. The sponsor has noted in the DEIS that most sensitive locations are already fitted with double glazed windows, and neglects to recognize that while air conditioners are a form of alternative ventilation they are also costly and a source of additional noise themselves. If the sponsor combined the air conditioning unit with a program to underwrite its use it could be more effectively considered as a mitigation technique in relation to *temporary* noise and air quality impacts.

Finally, the issue of construction noise mitigation must be looked at with the consideration of working hours. Normally scheduled working hours for the site are to be expected. Concern is raised however where the DEIS details weekend hours and hours of extended work. The DEIS states that:

"*The typical weekend workday would be on a Saturday from 7 AM with worker arrival and site preparation to 5 PM for site cleanup. It is expected that weekend work may be required on one weekend day for approximately 50 percent of the weekends over the course of construction and, in exceptional circumstances, two weekend days would be required*."

Nighttime work (3:30 PM to 11 PM), which may also occur once or twice a week during critical construction phases, could require a separate workforce, totaling no more than 10 percent of the number of day shift workers, to perform specific construction activities at the project site.

Weekend activities (7 AM to 3 PM), on the other hand, are expected to occur more regularly throughout construction on one of the two weekend days and require, on average, approximately 20 percent of the regular day shift workforce. Truck deliveries would also take place during these extra work shifts; however, at considerably lower levels than the regular day shift."

According to the current schedule of construction this implies that during the peak times from the 3rd quarter of 2008 to the 2nd quarter of 2009 when there are expected to be 3400 workers and 420 trucks daily on the site there are anticipated to be up to 340 workers and 42 trucks on site until 11pm up to twice a week. As well as 680 workers and 82 trucks performing construction during 50% of weekends, possibly on both Saturday and Sunday. This projection, if accurate is unacceptable as a planned schedule. The respite from construction activity in the evenings and on weekends will provide essential relief to the corrupted quality of life that the surrounding residents will be forced to endure over the 10 year period of the project.

The adherence to normal working hours could also greatly contribute to solving the unresolved issue of disruption at community areas near the site. As stated in the DEIS the Pacific Branch of the Brooklyn Library will experience '*significant adverse impacts from noise between 2007 and 2009*'. Curtailing construction every day of the weekend and everyday after 6pm could provide a measure of relief at anticipated times for the community to use the library facilities in peace. Likewise, the three open spaces that the DEIS identifies as expected to experience adverse noise impacts: Brooklyn Bear's Community Garden, the Dean Playground and South Oxford Park could benefit from the adherence to regular working hours and could be utilized at anticipated times uninterrupted by construction noise.

Special attention should be paid to the abatement of construction related noise that will affect J.H.S. 113, the Ronald Edmonds Learning Center. All noise of a detectable decibel within any part of the school should be scheduled around school hours. On this point enforcement should be absolute. There is no excuse to disrupt the proceedings of public education when it can be avoided by managed scheduling.

Additional noise concerns not identified in the DEIA include the jack hammering of streets to lay new sewer facilities. The DEIS states "*To support the proposed project, some of the water and sewer lines within and around the project site would be replaced with a new grid of mains*." Every street in the immediate area will be jackhammered to accommodate the installation of a system of 60", 48", 42", 36", 24" and 18" sewer pipes. Pipe installation as described in the DEIS involves jackhammers, pavement cutters, pouring gravel and deliveries by flatbed trucks, yet there are no noise mitigation techniques mentioned as specifically related to the ripping up of streets outside the construction site and the laying of the new sewer system. This topic should be more fully researched and a program should be developed to employ and enforce the quietest equipment possible in conjunction with muffling devices and buffering systems along with a strict adherence to regular working hours.

Also missing from the DEIS is the outlining of a process for citizens to submit complaints and concerns during the project construction. When health and safety measured are disregarded or a citizen witnesses the deviation of a described process there should be a clear channel through which a knowledgeable representative of the project can communicate with the citizen and answer concerns.

3.12 Public health

The main points made by the DEIS with regard to air quality seem to be that (i) "any action predicted to increase the concentrations of these particulate matter of 2.5 microns or less ($PM_{2.5}$) above the thresholds would be deemed to have potential significant adverse impact..."(page 18-5) and (ii) the thresholds are in fact expected to increase above the *daily* (24-hour) limit on a few occasions and will exceed the *annual* threshold at a small number of sidewalk and ground floor locations. It is concluded, without presenting any real basis, that "No significant adverse impacts to public health are anticipated as a result". However, it is impossible to tell from what is presented whether this conclusion is the correct one.

Two things are missing that would help assess the true risk to public health:

1. the actual *degree* to which the thresholds will be exceeded (i.e., exceeded by how much?), and
2. the expected composition of the $PM_{2.5}$.

3.12.1 $PM_{2.5}$ estimates

We feel it is critical to provide estimates and information that quantify by how much the $PM_{2.5}$ thresholds are expected to be exceeded. The new proposed $PM_{2.5}$ thresholds by EPA appear to be 70 micrograms per cubic meter of air ($\mu g/m^3$) for a 24 hour period and 35 $\mu g/m^3$ for an entire year.

Thresholds are not magic numbers and are constantly being revised by EPA, OSHA, etc, usually in downward fashion as more data become available on health effects in humans and animals. However, in reality the risk of health effects almost never goes from zero to non-zero as the exposure level crosses below some threshold (i.e., an exposure level of 65 $\mu g/m^3$ over a year is not really that different from say 71 $\mu g/m^3$; the health risk does not suddenly disappear when the exposure level is slightly below the threshold; it is simply a lower, perhaps imperceptible risk). So it is very important to talk about the expected values of $PM_{2.5}$ concentrations and not just whether they are expected to be above or below the thresholds.

The EIS does not go into much detail at all about how the $PM_{2.5}$ estimates were derived for this project, but we expect it is from some sort of modeling process. This is usually the best one can do, and models like these have often been validated in real world conditions before applied theoretically like in this case. Therefore, it is important to expand on the methods used (and how their validity was determined or established). However, as importantly, the modeling assumptions also determine to a large degree the validity and accuracy of the output ("garbage in garbage out"), and these assumptions should be stated explicitly. Have they been reviewed by an independent expert for this particular project and found to be reasonable and appropriate?

3.12.2 Expected composition of the $PM_{2.5}$

It is critical to have a sense of the composition of the particulate matter that will be aerosolized during this project. The EIS is very non-specific about this. Cleary the composition of the $PM_{2.5}$ varies from site to site and project to project, so it's almost impossible to know in advance with a great deal of specificity. But given that this project is centered on a former rail yard and in an area with a long history of high volume vehicle traffic (Flatbush and Atlantic Avenues), we are concerned and require more information on things like the lead and PCBs that might be aerosolized during the project. Even if the overall $PM_{2.5}$ is below the thresholds, if there is a high lead component and the exposure period is prolonged, this can result in increased blood lead levels, which in turn have an increased risk of adverse outcomes, which have been well-documented.

Despite major reductions in environmental lead exposures for much of the US population[17], lead poisoning remains a significant public health problem.[18]. Lead, which persists and therefore accumulates in the environment, can be found in very high concentrations in urban environments, leftover from car exhaust when lead was still in gasoline. Also, there is lead paint, which may be part of any existing or previous structures at the site. Studies have shown that lead levels in both the environment increase (on and around urban construction sites), and the blood levels of construction workers due to aerosolization of lead in soil and paint at the site as a result of the work/upheaval. The risk is clearly highest for the workers, who should use personal protective equipment and other measures, but given that $PM_{2.5}$ levels will be elevated in some residential areas, this becomes a potential public health concern as well as an occupational health concern. Depending on the lead exposure levels, this may pose a risk of acute health effects and/or chronic ones. Even at blood lead levels below the US Centers for Disease Control and Prevention's level of concern (threshold of 10 μg/dL) lead has been shown to cause adverse effect on blood pressure, hypertension, and kidney function in the general population. [19]

3.12.3 Lead and blood pressure relationships

In a recent study, blood lead was a significant, positive predictor of both elevated systolic and diastolic blood pressure in women.[20] A difference in BLLs between the lowest quartile and the highest quartile was associated with a difference of 1.7 mmHg in systolic blood pressure and 1.4 mmHg in diastolic blood pressure. In a study of 45-year-old women living in Copenhagen County, Denmark, higher BLLs were associated with elevated diastolic blood pressure.[21]

The mechanisms of lead-induced hypertension are not well-characterized, even in animal models. One hypothesis is that lead induces hypertension through effects on the kidney. A recent retrospective study of 509 healthy participants of the Normative Aging Study found BLLs to be significantly positively correlated

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[17] Pirkle JL, Brody DJ, Gunter EW, et al. The decline in blood lead levels in the United States. The National Health and Nutrition Examination Surveys (NHANES) *JAMA.* 1994;272(4):284-291.

[18] Brody DJ, Pirkle JL, Kramer RA, et al. Blood lead levels in the US population. Phase 1 of the Third National Health and Nutrition Examination Survey (NHANES III, 1988 to 1991). *JAMA*. 1994;272(4):277-283.

[19] Nash D, Magder L, Lustberg M, et al. Blood lead, blood pressure, and hypertension in perimenopausal and postmenopausal women. *JAMA*. Mar 26 2003;289(12):1523-1532.

[20] *Ibid*.

[21] Moller L, Kristensen TS. Blood lead as a cardiovascular risk factor. *Am J Epidemiol.* 1992;136(9):1091-1100.

with serum creatinine levels.[22] A study of lead-exposed workers, with high BLLs (mean=37 µg/dL), reported increases in diastolic blood pressure and in levels of urinary biomarkers for renal function.[23] Batuman and colleagues[24] reported that cases of essential hypertension (hypertension of unknown etiology) with reduced renal function had significantly more chelatable lead than essential hypertension cases with normal renal function. In the present investigation, kidney function, as measured by serum creatinine, did not appear to mediate the associations between blood lead and blood pressure. Thus, lead may act on blood pressure through effects on the vasculature or central nervous system, or more sensitive measures of renal function may be required to test mechanistic hypotheses. However, Staessen et al[25] reported no association between renal markers of lead toxicity and blood pressure in a large cohort study of women.

Several population-based studies on the association of lead with and systolic and diastolic blood pressures have been carried out since the mid 1980s, both cross-sectional. The results of these studies have been mixed but there is considerable concordance with regard to the directionality of the observed associations, with most consistently finding a weak positive association between blood lead and both systolic and diastolic blood pressure in men and women, African-Americans and whites.[26] A recent meta-analysis by Schwartz of 15 studies of lead and systolic blood pressure in men estimated that a change in blood lead from 5 to 10 µg/dL was associated with a increase of 1.5 mmHg in systolic blood pressure (95% CI 0.87-1.63 mmHg)[27], which compares well with the corresponding estimate from this investigation (1.6 mmHg, 95% CI 0.97-2.2).

In summary, the scientific and medical literature indicate a consistent link between exposure to low levels of lead and increased blood pressure and risk of hypertension. From a public health perspective, the most important and troubling implication of these findings is that lead appears to increase blood pressure in women at very small increments above 1.0 µg/dL -- well below what has is considered deleterious in adults. The mean blood lead level in ar recent sample of US women where effects on blood pressure and hypertension were observed was 2.9 µg/dL. Epidemiologic studies like this demonstrate effects of lead at levels below US occupational blood lead exposure limits (40 µg/dL) and even below the current CDC level of concern for preventing lead poisoning in children (10 µg/dL). These data are consistent with suggestions that no exposure threshold may exist for lead toxicity in modern populations, which is credible, based upon calculations that modern humans have hundred fold elevations of blood lead over that of pre-industrial populations.

3.12.4 Recommendations

We strongly suggest that some kind of ongoing or routine monitoring of air quality for the duration of the project be carried out, including concentrations and composition/constituents of the $PM_{2.5}$ (e.g., lead and others things which may be of concern and also measurable). These should be monitored by an independent party, such as an industrial hygienist, and should be done at times and locations not known in advance to the project sponsors. Results should be communicated to decision makers and the community regularly and, when warranted, appropriate control measures should be undertaken. Many of these are required to be monitored for the safety of the workers; this occupational monitoring information should be made available on an ongoing basis.

In thinking of other potential health concerns, smokers come to mind as a potential vulnerable population here. As with any particulate exposure, the amount, concentration, and absorption of these materials is

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[22] Kim R, Rotnitsky A, Sparrow D, Weiss S, Wager C, Hu H. A longitudinal study of low-level lead exposure and impairment of renal function. The Normative Aging Study. *JAMA*. 1996;275(15):1177-1181.

[23] Cardoso dos Santos EA. 1994

[24] Batuman V, Landy E, Maesaka JK, Wedeen RP. Contribution of lead to hypertension with renal impairment. *N Engl J Med.* 1983;309(1):17-21

[25] Staessen J. Low-level lead exposure, renal function and blood pressure. *Verhandelingen - Koninklijke Academie voor Geneeskunde van Belgie.* 1995;57(6):527-574.

[26] Hertz-Picciotto I, Croft J. Review of the relation between blood lead and blood pressure. *Epidemiol Rev.* 1993;15(2):352-373.

[27] Schwartz J. Lead, blood pressure, and cardiovascular disease in men. *Arch Environ Health.* 1995;50(1):31-37.

magnified in smokers. Therefore smokers are likely more vulnerable than others to the impact of this project. To offset this risk we suggest that increased support be provided for smoking cessation programs in the surrounding community. They could supplement what is currently being done by the NYC Department of Health and Mental Hygiene, and this would have a substantial impact on improving public health in the community.

Finally, we also recommend that children in the immediate area be screened for lead poisoning with increased vigilance. The EIS should specify a program to be implemented by the project sponsors that extends the screening programs currently provided by public agencies, and includes a communications program to inform the surrounding communities as to their availability.