

WHITE PAPER

**Terrorism, Security and the Proposed Brooklyn Atlantic Yards  
High Rise and Arena Development Project**

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*Authored by*

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This document provides an overview of terrorism concerns with regard to Forest City Ratner's proposed Brooklyn Atlantic Yards (BAY) Development in Prospect Heights, Brooklyn. The issues raised by a possible terrorist attack on the proposed project site include increased project and infrastructure costs, traffic dislocations, local economic impacts, public health effects, and, of course, public safety.

The following material focuses on terrorist related issues and consequences that result from the specific location, nature and design of this project and not simply generic issues arising from the construction of large buildings. This is similar to the NYPD-driven review of security issues relating to the construction of a specific structure, the Freedom Tower, at a specific location, Ground Zero.

Reviewing projects to identify terrorism issues is becoming critical as this country – especially New York City – learns to cope with the new reality of living in a world where terrorists can strike anywhere and at any time. The proposed BAY high-rise and arena project plans contradict current trends concerning security requirements. Unless redesigned, the BAY project will make Brooklyn a decidedly less safe place to live, work or visit.

The authors estimate that a devastating attack on the BAY project area – for instance, an 18-wheel tractor-trailer packed with 12,000 lbs of explosives detonating next to the glass walled Net's Arena – could cause 3,000 to nearly 7,000 casualties, create \$250 to \$500 million in direct damage and up to \$1 billion in collateral and indirect damage. Additionally, the costs to prevent a terrorist attack are estimated at more than \$25 million annually in direct and indirect expenses for security implementation, including but not limited to: vehicle screenings, transit security, mass event patrols and check points, closed circuit monitoring and operational personnel (see appendix A).

The amount of public money needed to support this project – currently estimated to be between \$1.1B and \$1.5B before any security costs - could be better and more effectively spent without simultaneously creating an overly expensive and dangerous terrorist target in Brooklyn.

### **What is Terrorism**

The Intelligence Community is guided by the definition of terrorism contained in Title 22 of the US Code, Section 2656f(d):

- “Terrorism” means premeditated, politically motivated violence perpetrated against noncombatant targets by sub-national groups or clandestine agents, usually intended to influence an audience.
- The term “international terrorism” means terrorism involving the territory or the citizens of more than one country.
- The term “terrorist group” means any group that practices, or has significant subgroups that practice, international terrorism (<http://www.cia.gov/terrorism/faqs.html>).

### **The BAY Project as a Terrorist Target**

There are many factors that make this project vulnerable to becoming a target of terrorist activity. These include:

- BAY's proximity to the biggest transportation hub in Brooklyn, the Atlantic Avenue Station, serving 10 subway lines and a Long Island Railroad (LIRR) terminus. In this context it is relevant to consider the following threats to centralized transportation hubs.

- The Atlantic Avenue Station was targeted in a 1997 terrorist plot. (See Jihad in Brooklyn, by Samuel Katz, New American Library, 2005.) And recently, Atlantic Avenue Station renovation plans were mysteriously discovered scattered loose on Brooklyn Streets. (See NY Post, February 6, 2005)
- The Herald Square Station was the focus of a thwarted suicide bombing. (See NY Magazine, December 6, 2004.)
- Grand Central Terminal plans were found in the leader of the Spanish train bombing's computer. (See Madrid Train Bombing Suspect Had Sketch of New York's Grand Central Terminal, By Daniel Woolls, Associated Press Writer, March 2, 2005)
- Proximity of the BAY Project to critical land transportation routes, three major cross borough thoroughfares: 4<sup>th</sup>, Flatbush and Atlantic Avenues.
- A sports arena with publicly scheduled mass events neighboring the Atlantic Avenue Station, major local thoroughfares and the project's other 19 high-rise buildings. Designed by Frank Gehry, the buildings will have an international profile.
- The 19 high-rise buildings are designed around central courtyards accessible to the public and city streets. Mimicking the Oklahoma City truck bomb (A Ryder rental truck with 4 to 5,000 pounds of explosives), a terrorist would be able to drive inside and destroy multiple high-rise towers in a single explosive event (Special Report, Cable News Network, 1996).
- Neither the arena nor the towers are set back from the streets or avenues, making them subject to the full force of car or truck bombs. The Freedom Tower was forced into redesign by the threat of a bomb-laden 18-wheeler exploding next to the building. This real threat remains for the BAY project.
- The high-end commercial space in the high-rises that can be expected to include government and/or financial offices, declared Al Qaida targets.
- The vast numbers of people living, working, and passing through the complex every day constitute another declared Al Qaida target criteria. Stadium spectators, business persons, retail shoppers, commuters and people who live in the complex's buildings will add to the current daily use of Atlantic Avenue Station.
- The arena may be used as an Olympic venue if New York City decides to renew its Olympic bid for future games, and as a venue for other major sporting events, including National Basketball Association Playoffs and college "March Madness" events.

### Security Planning Flaws

Thus far the BAY plans have no mention of safeguards to protect the development or the borough's population and investments. There have been no indications that new spending to address the financial burdens of security has been factored into the project's budget, nor whether proponents have worked to involve the community, police and watch organizations to address emergency planning.

The developer, the Metropolitan Transit Authority (MTA), the city and the state share an enormous responsibility to prepare adequately for and to prevent potential terrorist attacks on the project. Including appropriate terrorism prevention strategies at this stage of planning will cost these parties additional time and funding, perhaps causing the project to be over-budget. However, putting off security concerns will only make such costs far more burdensome in the future.

Security costs are not to be ignored, especially as the Federal Terrorism Insurance law expires this year

(See “Who Bears the Risks of Terror?”, By Edmund L. Andrews, NY Times, July 10, 2005). Over the 30-year life of the project, millions of dollars will be added to the project cost if federal payments cease. Today, we live in a world where the threat of terrorism is a reality and no actual attack is required to fundamentally affect a project.

Responses to security concerns could affect existing Community Benefits Agreement (signed in late June, 2005) commitments, be subject to regulatory compliance with Federal, state and city anti-terrorism laws, and otherwise affect ongoing planning and coordination with governmental agencies.

The project’s lead agency, the Empire State Development Corporation (ESDC), is not legally obligated to follow either local codes or best practices. They may abandon their responsibility for the Brooklyn Borough’s safety. As the National Institute of Standards & Technology (NIST) concluded recently, “Agencies that are exempt from building codes, such as the Port Authority, should have an independent party certify their compliance with codes, rather than simply deciding for themselves.” (See ‘3-Year Federal Study of 9/11 Urges Safer Skyscraper Rules.’ Jim Dwyer and Eric Lipton, NY Times, June 22, 2005.) The ESDC’s compliance with this recommendation, however, is not expected in the near future.

### **Considering Terrorism**

A terrorist cell can target a range of transportation, buildings, infrastructure, and human life at any time of day, using a variety of methods. A broad look at these variables must be considered when evaluating the project’s impact on Brooklyn, its citizens and its visitors.

#### **A Worst-Case Scenario**

Let us start with a worst-case scenario based on location, of prime consideration for any real estate development.

Although it may not be the most likely mode of attack, and a WTC-like attack is certainly not the easiest one to execute, an assault with a passenger jet on the BAY project would be devastating. The complex is an ideal target for aerial attack due to its proximity to area airports and air traffic. The BAY site sees approximately seventy to eighty airplane over-flights per day on a flight path leading into LaGuardia Airport, along with small craft and helicopter flights. Due to the flight path, any aircraft could fly into any of the 19 closely spaced high-rises without triggering suspicion or allowing for timely response, let alone defense. (See NY Post: “This Drunk Stole a Plane & Flew It Around for 5 Hours Undetected: It Proves We’re All Sitting Ducks”, June 23, 2005.)

Attack from the air would result in a huge loss of life and property both on and off the development site. The risk and ease of such an attack serves as a clear example of the costs to consider when calculating terrorism insurance premiums.

Due to their proximity to the towers, it is possible that over-flights and other air traffic will have to be rerouted during elevated terror alerts issued from Washington, or arena events. The Federal Aviation Administration will need to investigate such flight plan alternations and draft a study to determine the environmental and economic impact of these changes, but there is no indication that they have been contacted by either Forest City Ratner or the ESDC.

#### **Some All-Too Plausible Scenarios**

**Background:** *Apart from its location the BAY project is also an ideal target because of its built in design flaws. The Site Plan indicates a perimeter of high-rise towers surrounding an open central green area with only five street entrances to the entire 24 acre complex. Additionally there are also plans for underground parking beneath the Gehry arena.*

In this mix, the greatest design concerns arise from the lack of building setbacks for all the major building

structures. The BAY project's perimeter buildings will abut the sidewalks, maximizing the blast effects of any car or truck bomb passing by. The result of a single (or multiple) car or truck bombing during an arena event or during peak commuting times could cause widespread physical destruction and loss of life. Obviously, these sorts of scenarios must also be factored into insurance calculations.

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The Gehry arena has been widely acclaimed for its planned glass exterior. One security consultant estimates that more than 80% of injuries from bombing attacks can be caused by flying glass. (See American City and Country Magazine, "Guarding Against Another Oklahoma City," June 1, 1995) (Al Qaida's Muhammad Naeem Noor Khan, whose computer held surveillance files of the New York Stock Exchange, the World Bank, and other financial targets, saw the building's glass exteriors as a source of deadly shrapnel.) Given the lack of BAY complex setbacks, it is relevant to note that the redesigned Freedom Tower's facades were moved away from the street, its base sheathed in metal, and its glass exterior upgraded to withstand a blast of 10,000 pounds, up from 500 pounds. The Oklahoma City bomb is estimated to have been 4 - 5,000 pounds. (See NY Times "Many demands on New Tower at Ground Zero", June 7, 2005). Similar changes will be required of the arena.

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The open interior of the complex presents another design-based safety flaw. A car or truck bomb could be driven inside a courtyard surrounded by towers where its detonation would affect multiple structures, creating a larger-scaled version of the destruction of the Murrah Federal Building in Oklahoma City. Easy street access would also allow a terrorist to drive a car or truck bomb into the underground parking lot in an attempt to collapse everything above, as in the 1993 WTC bombing.

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A prudent decision to mitigate the potential security threats, however, would have unintended consequences.

The additional design time, materials, personnel and funding needed to secure all entry points to the complex's open center, delivery entrances, underground parking facilities, and the arena are expected to add to the complexity and cost of operating the facilities. Unfortunately once these security measures are implemented, the complex will become a fortress-like superblock. This change would destroy neighborhood connections, threatening the economic and community benefits of the project that have been included in Dr. Andrew Zimbalist's study, commissioned by Forest City Ratner, *Estimated Fiscal Impact of the Atlantic Yards Project on the New York City and New York State Treasuries*, as an underlying economic reason for proceeding with this project. There will be times when vehicles will need to be inspected before entry into the complex and/or parking facilities. Given the size of the complex, and its inclusion of big box retail, 18-wheeler delivery trucks—the same ones that threatened the Freedom Tower – will be a constant presence. Requirements for vehicle searches will result in widespread traffic jams and extreme delays throughout downtown Brooklyn. Traffic diversion onto local streets and throughout the surrounding neighborhoods is a dangerous consequence given pollution, nearby schools, residential areas, and lack of traffic control. The lengthy construction phases will add their various layers of dislocation to this issue.

An August 1994 heightened security alert forced the inspection of all commercial vehicles using the Manhattan Bridge, causing miles of gridlock in Downtown Brooklyn. Considering the enormous projects beginning in Brooklyn – 4th Avenue Rezoning, Downtown Brooklyn Rezoning, DUMBO developments, cruise line piers – the BAY project could become the tipping point for major traffic and environmental impact problems at the junction of 4<sup>th</sup>, Flatbush and Atlantic Avenues where traffic bottlenecks are already a daily occurrence.

### Bio/Chemical Terrorism

Both the BAY project's location and its design come into play in the case of a bio/chemical assault. The Department of Homeland Security's (DHS) 15 National Planning Scenarios (NPS) included 8 Scenarios involving biological or chemical agents and none involving aircraft (See NPS as Appendix B to this White Paper). Our government's security professionals take bio/chemical attacks very seriously; those advocating for this project should take them equally so.

A purported benefit of joining the arena with the Atlantic Avenue Station is the ability to move people in and out easily. This is advantageous to a terrorist cell using bio/chemical agents on the centralized transportation facilities during events attended by large crowds. Gaining entry through the unguarded entrances and exits of the complex (such as the food delivery or maintenance entrances), or the interconnected underground MTA or LIRR facilities, a terrorist cell could unleash a range of bio/chemical agents, as in the deadly Sarin gas attack in Tokyo which killed 12 and injured 5-6000 persons (<http://www.discoverychannel.co.uk/zerohour/feature4.shtml>, and "Japan marks 10th anniversary of doomsday cult gas attack" USA Today, 3/20/05).

To mitigate such bio-terrorism attacks, new modifications will have to be implemented. These may include isolating air circulation systems, installing monitoring devices, cut-offs and filtering agents to prevent toxins and/or bio-agents and chemicals from spreading throughout the complex and then out toward Brooklyn homes, offices, transportation depots and schools. The linkage with MTA facilities at the Atlantic Avenue Station equates to significant additional capital costs for the MTA, whose capital budget has been cut once again. (See also "Pol: LIRR is Unsafe", Chuck Bennett, amNew York staff writer, March 8, 2005 and "MTA Lags in Spending to Combat Terrorism", Sewell Chan, NY Times, March 19, 2005)

The 2002 Chechen hostage taking ended when the booby-trapped Moscow Theater was filled with a fentanyl-based aerosol. It was a controlled, state-sanctioned attack; yet 33 terrorists and 128 hostages died in the raid or in the following days." (See "Russian Troops Storm Moscow Theater." October 25, 2002. [www.cnn.com](http://www.cnn.com)).

### Additional Concerns

In the case of a catastrophic event, the WTC experience provides valuable and relevant data regarding rescue and evacuation, air toxicity levels over time, and evacuation issues; however, the ESDC is under no obligation to follow best post 9/11 practices. The failed Jets Stadium discussed the issue of public security; the BAY project has not discussed public security and no public assurances have been given. (See "Security Issues Are Discussed by the Police and the Jets," By Charles V. Bagli and Judith Miller, NY Times, June 1, 2005.)

To reduce the likelihood of catastrophic aftermaths from terrorist (or natural) disasters, the recently released NIST report includes 25 pages of recommendations for the construction of skyscrapers – relevant to the BAY's 19 towers – such as redundant sprinkler systems, more robust elevators and stairways, and higher standards for fireproofing and testing. (See "3-Year Federal Study of 9/11 Urges Safer Skyscraper Rules", Jim Dwyer and Eric Lipton, NY Times, June 22, 2005). As above, the concern is that the ESDC can simply choose to ignore every one of those recommendations.

A significant attack could also cause long-term damage to the critical commuting corridors, the Atlantic Avenue Station complex, and evacuation and rescue plans (Atlantic Avenue is a coastal evacuation route). Disrupting the everyday flow of people, traffic and goods within Brooklyn and between Brooklyn, Manhattan, Queens and even Long Island and Staten Island would cause significant economic and social damage for the entire city. No appropriate traffic and economic studies have been released to the public, and the lead developer has not announced its intent to begin those studies.

Brooklyn has few large skyscrapers. The addition of 19 towers (17 on the footprint and directly 2 adjacent to it) will require additional manpower, specialized equipment and training to handle potential terrorist scenarios, high-rise fires, evacuations and other associated demands. The initial and ongoing costs associated with paying for and satisfying these needs must be addressed. It is yet to be determined what provisions and procedures exist at local hospitals, or police and fire stations to handle the aftermath of terrorist attacks on the project adequately. When these procedures are eventually planned, however, such services may not be adequate to the potential aftermath of a terrorist event due to the increases in building and population density from BAY and major rezoning on 4<sup>th</sup> Avenue and in Downtown Brooklyn.

The area where the BAY complex is to be built is a certain section of Brooklyn referred to as "Asthma Alley," (expressing a feeling that this area in Brooklyn shows a markedly higher rate of asthma than adjacent areas; National Center for Biotechnology Information, No Date). Any impact on traffic flows due to security, construction or destruction will adversely affect air quality and thus local asthma rates. Security-related traffic would include impacts caused by elevated security alerts, vehicle inspections for events, and false alarms over the projected 30-year life of the BAY project. The effect of each day/hour's worth of such traffic dislocations on the formulas to calculate air quality impacts and associated health and economic consequences must not be ignored. Just the threat of a terrorist attack has significant health impacts in an asthma-plagued area of Brooklyn.

Finally, given all such terrorist security concerns, Community Benefits Agreements regarding the use of local businesses, and the employment of neighborhood residents, may be overridden by the need to meet security bonding and background check requirements. Undoubtedly, this economic impact would deflate the BAY project's proposed local economic development benefits and any associated tax benefits.

Likewise, agreements regarding community access to the interior common space and other green areas would have limited availability to the community at large if the BAY complex has to be secured.

**In Conclusion**

Since there has been no public recognition or cost estimates of the security issues surrounding this project, the conclusion is that the public funding of this project should be withheld until these matters are fully addressed.

George Sweeny, NYPD Deputy Commissioner for Counter Terrorism, described the issue of design change for the Freedom Tower as follows:

"... the current environment of global terrorism ... entails much more than simply responding to events after they have occurred. ... The Freedom Tower represents a favorable scenario in which the vulnerabilities can be addressed in the design and construction phases, rather than making modifications after the fact." October 1, 2004 (See "Terror Cop Told of Fears as Early as Last Summer" Paul D. Colford, Daily News May 17, 2005.)

*It is the position of the drafters of this study that the time to account for security threats is now, before any commitments or final project approvals are inked, and not after, when consequences become known and are deemed unacceptable.*

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## **APPENDICES**

### **Appendix A**

The estimates for costs, casualties and damage uses the assumptions that:

- 25% of the building is catastrophically-impacted but the basic infrastructure supports the remainder of the building
- impact occurs on the long side of the arena, which abuts Flatbush Avenue, and there is a standard sidewalk width that separates the roadway from the arena (no further setbacks)
- the explosion occurs during a full capacity event, which includes 19,000 – 20,000 persons, with an additional 500-800 players, staff, media, and support personnel -- casualty rate of 15% to 35%
- there are 1,000 to 2,000 persons in the immediate vicinity -- casualty rate of 10% to 15%, mostly due to flying glass and debris
- there are 50 to 75 vehicles in the immediate vicinity, with an average of 2 passengers each -- casualty rate of 30% - 40%
- the surrounding towers have collateral damage but limited physical damage
- the surrounding commercial towers have limited occupancy (500 - 700 persons) – casualty rate of 5% - 8%
- the surrounding residential towers have moderate occupancy (1000 – 2000 persons) – casualty rate of 5% - 8%
- there is no subterranean damage (subways, walkways)
- arena cost is \$600 million, and replacement and cleanup efforts are 20% to 40% of that total
- there is \$100 to \$200 million in non-arena damage and cleanup (other facilities, vehicles, infrastructure, etc.)
- collateral damage consists of lost arena revenue, lost rent and commercial cash flows, long-term traffic issues, increased insurance rates, etc. 200% of primary damage is a conservative estimate
- annual direct and indirect costs include annual vehicle screening costs of \$5 million (deliveries and parking), \$4 million for event screening (personnel and infrastructure), \$6 million for off-site support & overhead (equipment, transportation, police overtime & costs, and management), and \$10 million in insurance. This does not include secondary costs related to traffic, pollution and other environmental effects.

### **Appendix B**

#### *15 National Planning Scenarios:*

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**EVENT1. Nuclear Detonation: 10-Kiloton Nuclear Device** DESCRIPTION Terrorists drive a van with a 10-kiloton nuclear bomb into the central business district of a major city and set it off. CASUALTIES could vary widely ECONOMIC IMPACT Hundreds of billions of dollars

**EVENT2. Biological Attack: Aerosolized Anthrax** DESCRIPTION Terrorists spray aerosolized anthrax from a van in three cities initially, followed by two more cities shortly afterward. CASUALTIES 13,000 dead ECONOMIC IMPACT Billions of dollars

**EVENT3. Biological Disease Outbreak: Flu Pandemic** DESCRIPTION An influenza pandemic begins in south China and spreads within months to four major cities in the United States. CASUALTIES 87,000 dead, 300,000 hospitalized in U.S. ECONOMIC IMPACT \$70 billion to \$160 billion

**EVENT4. Biological Attack: Pneumonic Plague** DESCRIPTION Terrorists release pneumonic plague into an airport bathroom, a sports arena and a train station in a major city, and it spreads rapidly. CASUALTIES 2,500 dead, 7,000 injured in U.S. ECONOMIC IMPACT Millions of dollars

**EVENT5. Chemical Attack: Blister Agent** DESCRIPTION Terrorists in a small aircraft spray a chemical blister agent over a packed college football stadium. CASUALTIES 150 dead, 70,000 hospitalized ECONOMIC IMPACT \$500 million

**EVENT6. Chemical Attack: Toxic Industrial Chemicals** DESCRIPTION Terrorists attack oil refineries with grenades and bombs exploding cargo containers ignite ships, including one carrying toxic chemicals. CASUALTIES 350 dead, 1,000 hospitalized ECONOMIC IMPACT Billions of dollars

**EVENT7. Chemical Attack: Nerve Agent** DESCRIPTION Terrorists release sarin gas into the **ventilation**



**systems of three large office buildings in a major city.** CASUALTIES 6,000 dead, 350 injured  
ECONOMIC IMPACT \$300 million

EVENT 8. Chemical Attack: Chlorine Tank Explosion DESCRIPTION Terrorists infiltrate an industrial storage facility and blow up a storage tank of chlorine gas, releasing a large quantity downwind.

CASUALTIES 17,500 dead, 10,000 severely injured and 100,000 hospitalized ECONOMIC IMPACT Millions of dollars

EVENT 9. Natural Disaster: Major Earthquake DESCRIPTION A 7.2-magnitude earthquake occurs on a fault line through a major city, affecting six counties with a total population of 10 million. CASUALTIES 1,400 dead, 100,000 hospitalized ECONOMIC IMPACT Hundreds of billions of dollars

EVENT 10. Natural Disaster: Major Hurricane DESCRIPTION A Category 5 hurricane with sustained winds of 160 miles per hour and storm surges of 20 feet hits a major metropolitan area. CASUALTIES 1,000 dead, 5,000 hospitalized ECONOMIC IMPACT Millions of dollars

EVENT 11. Radiological Attack: 'Dirty Bombs' DESCRIPTION Terrorists set off bombs with radioactive cesium-137 in three nearby moderate-to-large cities, contaminating 36 city blocks in each. CASUALTIES At each site, 180 dead, 270 injured and 20,000 contaminated ECONOMIC IMPACT Up to billions of dollars

EVENT 12. Explosives Attack: Improvised Bombs DESCRIPTION Terrorists use handmade bombs, a large car or truck bomb and suicide belts to attack a **sports stadium** and an emergency room.

CASUALTIES 100 dead, 450 hospitalized ECONOMIC IMPACT Localized  
no specific estimate

EVENT 13. Biological Attack: Food Contamination DESCRIPTION Terrorists use liquid anthrax to contaminate batches of ground beef and orange juice that are distributed to other parts of the country.

CASUALTIES 300 dead, 400 hospitalized ECONOMIC IMPACT Millions of dollars

EVENT 14. Biological Attack: Foot-and-Mouth Disease DESCRIPTION Terrorists infect farm animals at several locations with foot-and-mouth disease, which spreads as the affected animals are transported.

CASUALTIES None, though huge loss of livestock ECONOMIC IMPACT Hundreds of millions of dollars

EVENT 15. Cyber Attack DESCRIPTION Over a period of several weeks, terrorists conduct cyber attacks on several parts of the nation's financial infrastructure. CASUALTIES None directly ECONOMIC IMPACT Millions of dollars

(Source by Homeland Security Council) (pg. A16) (March 16, 2005)

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