located on the opposite side of the Brooklyn Connector, an area that comprises the majority of the area’s population.

STREETScape & LANDSCAPE ENHANCEMENTS

Each of the proposed Build Alternatives would include construction of new streetscape and landscape elements along selected local streets within the project area. Throughout the entire project limits, areas disturbed either by new construction or the removal of existing structures immediately adjacent to the connecting approach roadways or the Main Span would be restored in kind or improved as appropriate. New landscaping would re-establish existing habitat or create new habitat, prevent erosion and/or add aesthetics to the area. Items that would be used include new trees, shrubs, perennials, grasses and other appropriate landscape materials. Sidewalk areas of local streets paralleling or crossing beneath the structure would be reconstructed and receive a comprehensive streetscape improvement package including new decorative sidewalks, street trees, decorative crosswalks, pedestrian lighting, signage and other streetscape amenities.

BRIDGE LIGHTING

Architectural lighting to enhance the form of the bridge and pedestrian lighting of the walkway/bikeway would be considered for all Build Alternatives. The lighting would supplement required roadway lighting, provide additional opportunities for distant views of the bridge during nighttime and provide safety and protection for pedestrians and bicyclists.

PROTECTIVE RAILING

A protective railing system would protect users, be designed to enhance the view of the bridge architecture and provide relief from the expanse of the roadway pavement when viewed from the bridge.

MEDIAN BARRIERS

Median barriers between the eastbound and westbound lanes would be constructed on Alternatives RA-5 and RA-6. On Alternatives BR-2, BR-3, and BR-5 eastbound and westbound traffic would be on separate bridges.

C.2.n. Provisions for Pedestrians

All five Build Alternatives include the realignment of at-grade streets including portions of Meeker Avenue, Cherry Street and 54th Road. These streets would include a 3.0 m (10'-0") wide sidewalk for pedestrian use. Crosswalks and sidewalk ramps as well as pedestrian signaling would be provided along Meeker Avenue between Kingsland Avenue and Van Dam Street and along Cherry Street from Vandervoort Avenue to Gardner Street. In Queens, sidewalk ramps would be provided at the intersections of 54th Road and Laurel Hill Boulevard and 54th Road and 43rd Street.

Alternatives RA-5, BR-2, BR-3 and BR-5 would also include a bikeway/walkway across the new bridge. See section III.C.2.o for further information regarding this shared use facility.

All new pedestrian facilities would be designed in accordance with the NYSDOT Highway Design Manual and the Americans with Disabilities Act Accessibility Guidelines (ADAAG).
C.2.o. **Provisions for Bicycling**

A 4.0 m (13'-1'"") wide bikeway/walkway is proposed as a shared-use facility for Alternatives RA-5, BR-2, BR-3 and BR-5. The pathway would be provided on the outside of the proposed structure separated from the traffic lanes by a 0.6 m (2'-0'"") wide concrete barrier. The facility would be designed in accordance with the *NYSDOT Highway Design Manual* and ADAAG. The bikeway/walkway would follow the profile of the proposed structure except at the ends of the pathway where it would be sloped to make at-grade connections. The maximum slope of the pathway would be 4.3%, which is in accordance with ADAAG.

**ALTERNATIVE RA-5**

The bikeway/walkway would be located on the south side of the new parallel bridge since locating the pathway on the existing structure would require widening the existing bridge. Widening the existing structure is undesirable since it would require the construction of new columns and the acquisition of additional properties.

In Queens, the pathway would connect to 54th Avenue where users could cross under the bridge to Laurel Hill Boulevard and access the existing pedestrian overpass to 43rd Street which passes beneath the LIE. Future provisions could connect to the existing New York City recommended bike route on Review Road. In Brooklyn, the bikeway/walkway would reach grade level west of Varick Avenue where users could cross under the bridge. Future provisions could connect to the existing New York City bike lane on Manhattan Avenue.

**ALTERNATIVE RA-6**

A bikeway/walkway is not recommended for Alternative RA-6 due to construction constraints. As described in Section III.C.1.c, it is not practical to construct a bikeway/walkway on the existing structure and, due to the limited space between the existing bridge and Old Calvary Cemetery where the new parallel bridge would be constructed, providing a bikeway/walkway on the new parallel structure is undesirable because it would impact Old Calvary Cemetery.

**ALTERNATIVES BR-2, BR-3 AND BR-5**

The three Bridge Replacement Alternatives would include a bikeway/walkway on the north side of the proposed structure. Locating the bikeway/walkway on the north side of the structure was found to be preferable because it would offer views of the Manhattan Skyline and provide convenient connections to the existing pedestrian overpass at 43rd Street in Queens.

In Queens, the pathway would connect to the existing pedestrian overpass where users could either access Laurel Hill Boulevard or 43rd Street which crosses under the LIE. Future provisions could provide access to the existing New York City recommended bicycle route on Review Road. In Brooklyn, the proposed bikeway/walkway would end west of Varick Street where users could cross under the bridge. Future provisions could provide access to the existing New York City bike lane on Manhattan Avenue.

C.2.p. **Lighting**

New lighting would be provided on the Brooklyn Connector, Brooklyn and Queens Approaches, and Main Span within the project limits, designed in accordance with NYSDOT lighting criteria. Consistent with the NYSDOT Standard Specifications, lighting would also be in accordance with the “General Specifications for Street Lighting Facilities” contained in the latest publication of...
“City of New York Specifications for Use with State of New York Department of Transportation Construction Contracts.” Under Alternatives RA-5 and RA-6, existing lighting standards and fixtures would be replaced on the segments to remain. Where at-grade street lighting systems are impacted by the project, new street lighting would be provided, designed in accordance with NYCDOT lighting criteria.

C.2.q. Navigation

Newtown Creek is a tributary of the East River in the New York Harbor and the Port of New York/New Jersey. It is considered a narrow tidal arm of the East River and forms a portion of the boundary between the Boroughs of Brooklyn and Queens. The mouth of the creek is located on the east bank of the East River about 3.6 miles above The Battery. The creek extends 3.3 miles eastward and southward and has several short tributaries and basins. Newtown Creek lies in a highly industrialized area of New York City. Almost the entire water frontage is developed for terminal and industrial purposes. Traffic is moderate and consists of petroleum products, sand, gravel and stone, scrap metal, and waste material. Vessel drafts today seldom exceed 4.6 m (15 ft). The mean range of tide in the creek is 1.2 m (4.1 ft) with generally weak and variable tidal currents.

CLEARANCE REQUIREMENTS

Based upon vessel descriptions obtained from the U.S. Army Corps of Engineers (USACE) Waterborne Commerce Statistics Center and NYCDOT movable bridge logs, from 1998 to August 2002, no transiting vessel or tug taller than 79 feet passed under the Kosciuszko Bridge. In fact, nearly all vessels passing the bridge were less than 50 feet in height. This supports the 27 m (88'-5") vertical clearance proposed for new structures over the creek, with a reasonable safety margin for high tides and adverse wind or weather conditions. The full analysis of vessels and businesses using Newtown Creek is included in Appendix F.

Decreasing the vertical clearance under the bridge would require a U.S. Coast Guard (USCG) permit (under Section 9 of the Rivers and Harbors Act of 1899 for the Rehabilitation Alternatives and under the General Bridge Act of 1946 for the Bridge Replacement Alternatives), applied for after the FEIS and ROD are published and the preliminary plans are completed. Preliminary coordination began as early as August 15, 1990, when Iffland Kavanagh Waterbury, P.C/ Ewell W. Finley, P.C contacted the First Coast Guard District regarding the preliminary and final design for rehabilitation of the Kosciuszko Bridge over Newtown Creek. Since that time, USCG has actively participated in meetings and been kept aware of the DEIS material being collected. The Section 9 Bridge Permit would include:

- Formal letter of application;
- Designation of New York State agent to make application;
- Location map;
- Plan and elevation drawings;
- Copy of Section 401 Water Quality Certification (WQC) from NYSDEC or evidence that it has been applied for;
- Coastal Zone Management (CZM) Certification from the New York State Department of State or evidence that it has been requested; and
NAVIGATION CHANNEL DREDGING REQUIREMENTS

As described in Section IV.B.3.j, each of the Build Alternatives would take advantage of the project’s location on Newtown Creek by using barges to ship construction material and equipment to the site. An examination of the condition of the Newtown Creek navigation channel, found in Appendix G, evaluated the ability to ship material on Newtown Creek and any dredging requirements associated with the rehabilitation or replacement of the Kosciuszko Bridge. The lower portion of Newtown Creek, between the East River and the Kosciuszko Bridge, has not been dredged since 1950. The last complete survey of Newtown Creek was tabulated from surveys by USACE in November 1991. The area to the west of the Kosciuszko Bridge appears to have a minimum 3.4 m (11 ft) channel depth at Mean Lower Low Water (MLLW) available for a horizontal distance of 45.7 m to 51.8 m (150 to 170 ft). The analysis of projected barge loads coming to the site found that a maximum draft of 3.2 m (10'-6") would be required, with some as low as 2.3 m (7'-6"), indicating that no dredging of Newtown Creek would be required for the transport of materials to the site. It is anticipated that dredging would be required at the project site (outside the navigation channel) to allow barges to off-load equipment and material to temporary platforms constructed on each side of the creek. It is recommended that either soundings or a bar sweep at the deepest depth be conducted in the relevant sections of Newtown Creek just prior to major construction to verify that conditions have not changed.