

**Response Action Plan and  
Construction Contingency Plan**

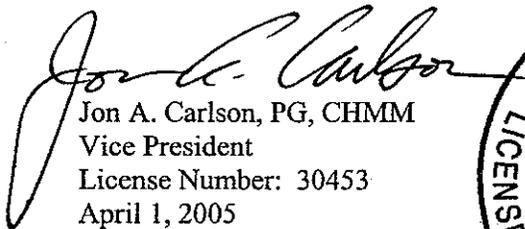
Proposed Van White Memorial Boulevard  
Minneapolis, Minnesota

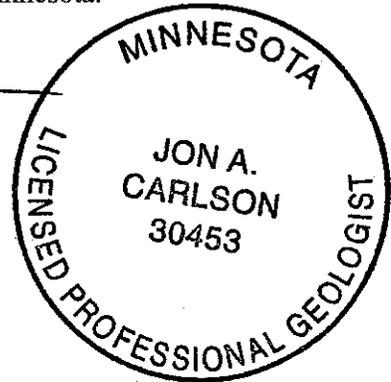
*Prepared for*

**City of Minneapolis**

**Professional Certification:**

I hereby certify that this plan, specification or report  
was prepared by me or under my direct supervision  
and that I am a duly Licensed Professional Geologist  
under the laws of the State of Minnesota.

  
Jon A. Carlson, PG, CHMM  
Vice President  
License Number: 30453  
April 1, 2005



Project BL-04-06469

Braun Intertec Corporation

April 1, 2005

Project BL-04-06469

Mr. Fred Campbell  
Mr. Mark Koplitz  
Ms. Kären Kromar  
Minnesota Pollution Control Agency  
520 Lafayette Road  
St. Paul, Minnesota 55155-4194

Re: Response Action Plan and Construction Contingency Plan  
Van White Memorial Boulevard  
Minneapolis, Minnesota

Dear Mr. Campbell, Mr. Koplitz, and Ms. Kromar:

On behalf of the City of Minneapolis (City), Braun Intertec Corporation (Braun Intertec) has prepared the attached Response Action Plan and Construction Contingency Plan (RAP/CCP) for Minnesota Pollution Control Agency (MPCA) review and approval.

The City is preparing to construct Van White Memorial Boulevard, a 3,600-foot-long boulevard that will stretch south from the intersection of 4th and Fremont Avenues to the intersection of Dunwoody Boulevard and Interstate 394. The new Boulevard will connect the Harrison and Heritage Park Neighborhoods located north of Interstate 394 with the Lowry Neighborhood located south of the Interstate. The project involves construction of the roadway, two bridges and their associated embankments. One of the bridges will cross Bassett Creek. The other, much-larger bridge will cross the existing Burlington Northern Santa Fe Railroad. The attached RAP/CCP will be implemented during construction and describes the proposed management of identified and possible unidentified contaminated soil and groundwater that might be encountered. The RAP/CCP also includes a work plan for additional investigation of the Scrap Metal Processors and Special School District #1 sites to further evaluate identified contamination prior to construction.

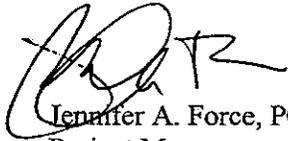
The City is applying for cleanup grants from the Minnesota Department of Employment and Economic Development, Hennepin County, and the Metropolitan Council for their spring 2005 grant cycle; therefore, we request that the MPCA review the RAP/CCP prior to May 1, 2005. The amount of funding received will determine the extent of response actions that are implemented across the site that are not necessarily required as part of the roadway construction.

Currently, TKDA, the project engineer, has been authorized to prepare final roadway design plans. These plans, when available, will be forwarded to you along with volume estimates on the amount of contaminated soil that will be excavated and proposed re-use or disposal options for the soil.

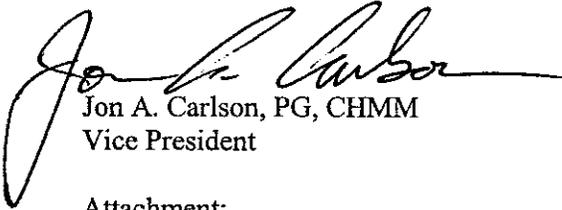
If you have any questions or comments regarding this RAP/CCP, please call Jennifer Force at 952.995.2454 or Jon Carlson at 952.995.2440.

Sincerely,

BRAUN INTERTEC CORPORATION



Jennifer A. Force, PG  
Project Manager



Jon A. Carlson, PG, CHMM  
Vice President

Attachment:

Response Action Plan and Construction Contingency Plan

c: Mr. Darrell Washington, City of Minneapolis  
Department of Community Planning and Economic Development

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## **A. Introduction**

The City of Minneapolis (City) is preparing to construct Van White Memorial Boulevard, a 3,600-foot-long boulevard that will stretch south from the intersection of 4th and Freemont Avenues to the intersection of Dunwoody Boulevard and Interstate 394. The new Boulevard will connect the Harrison and Heritage Park Neighborhoods located north of Interstate 394 with the Lowry Neighborhood located south of the Interstate (see Figure 1).

The project involves construction of the roadway, two bridges and their associated embankments. One of the bridges will cross Bassett Creek. The other, much-larger bridge will cross the existing Burlington Northern Santa Fe Railroad. To facilitate construction, the City will be acquiring additional right-of-way, primarily along the existing Freemont Avenue corridor, and also purchasing properties, such as the Feist Blanchard and Scrap Metal Processors sites. Figures 2 and 3 show the proposed roadway alignment through the project area. A profile drawing of the proposed roadway is included in Appendix A.

The proposed roadway will cross several sites with documented soil and groundwater contamination. Braun Intertec Corporation (Braun Intertec) prepared this Response Action Plan and Construction Contingency Plan (RAP/CCP), which will be implemented during construction and describes the proposed management of known and unknown contaminated material that might be encountered. The RAP/CCP also includes a work plan for additional investigation of the Scrap Metal Processors and Special School District #1 sites to further evaluate identified contamination prior to construction.

## **B. Project Contacts**

### ***Project Owner***

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***MPCA Emergency (State Duty Officer)*** (651) 649-5451

***Local Emergency*** 911

## **C. Project Background**

Van White Memorial Boulevard will cross several properties with known and/or a high potential for contamination. The following sections describe previous environmental investigation results, potential sources of contamination, and the proposed construction. For reference, Figures 4 and 5 summarize historical uses of sites along the proposed roadway, and Figures 6 and 7 depict the locations of former bulk-product storage based on information provided from aerial photographs and Sanborn fire insurance maps.

While summarized below, additional details regarding the investigations can be found in the following reports:

- *Development Limitations and Mitigations of a Site Presently Owned by Burlington Northern Railroad in Minneapolis, Minnesota, Review Draft* prepared by Barr Engineering Company (Barr) and dated July 1986
- *Evaluation Report, Irving Avenue Dump Site* prepared by Barr and dated November 1989
- *Remedial Investigation, Irving Avenue Dump Site, Minneapolis, Minnesota* prepared by Barr and dated August 1990

- *1995 Groundwater Quality Monitoring Report, Irving Avenue Dump Site, Minneapolis, Minnesota*, prepared by Barr and dated August 1996
- *Preliminary Geotechnical Evaluation and Limited Phase II Environmental Site Assessment, Linden Avenue Corridor Property, Minneapolis, Minnesota* prepared by Braun Intertec and dated September 3, 1998
- *A Preliminary Geotechnical Evaluation and Limited Phase II Environmental Site Assessment, Proposed Roadway and Bridge, Sumner-Olsen Redevelopment Area, Dunwoody Boulevard to Girard Avenue North, Minneapolis, Minnesota*, prepared by Braun Intertec and dated March 26, 1999
- *Limited Environmental and Geotechnical Data Review, City of Minneapolis Impound Lot/Former Irving Avenue Dump Site/Linden Yard Area Northwest of the Interstate 94 and 394 Interchange, Minneapolis, Minnesota* prepared by Braun Intertec and dated March 13, 2000
- *Environmental Assessment Report, Bassett Creek Valley Area, Minneapolis, Minnesota* prepared by Braun Intertec and dated April 6, 2001
- *Phase I Environmental Assessment, Basset Creek Valley Redevelopment, Minneapolis, Minnesota* prepared by Delta Environmental Consultants, Inc. (Delta) and dated December 12, 2001
- *Draft Phase II Environmental Assessment, Basset Creek Valley Redevelopment, Scrap Metals Processors Properties, Minneapolis, Minnesota* prepared by Delta and dated June 30, 2003
- *Phase II Environmental Site Assessment, Bassett Creek Valley Brownfields Redevelopment, Proposed Van White Memorial Boulevard, Minneapolis, Minnesota* prepared by the United States Army Corps of Engineers (COE) and dated March 2004.

### **C.1 Fremont Avenue Corridor**

Along Fremont Avenue from 4th Avenue to 2nd Avenue, the City will be acquiring an additional 30 feet to 60 feet of right-of-way from properties fronting Fremont Avenue (see Figure 2). Van White Memorial Boulevard will be constructed mostly at the existing grade; however, road construction also will likely include installation of underground utilities.

### **C.1.a Site Background**

In December 2001, Delta completed a Phase I Environmental Site Assessment (ESA) of properties located near the Freemont Avenue corridor from 4th Avenue south to Bassett Creek. The objective of the Phase I ESA was to evaluate the site for indications of recognized environmental conditions (RECs).

Based on the results of the Phase I ESA, the following RECs and historic RECs were identified for properties along the Freemont Avenue corridor:

- “Based on the review of Sanborn maps and aerial photographs, a filling station operated at the Mandile Fruit Company/Packaging Concepts, Inc. property from approximately 1947 to at least 1956. The presence of the filling station and the presumed presence of petroleum products at the subject property represent recognized environmental conditions.
- Based on the review of Sanborn maps and aerial photographs, the HAMAA property has historically been occupied by a dry cleaner, machinery and disinfectant manufacturers, and a towing/auto repair facility. It is likely that hazardous substances or petroleum products were used at the subject property, and there is potential a release may have occurred. This potential represents a recognized environmental condition.
- The former garage located at the rear portion of the building on the HAMAA property had one floor drain. According to Mr. Burniece, administrative associate at HAMAA, a small amount of oil was noted in the sanitary sewer line during a service call in February 2001. The presence of oil in the sanitary sewer line represents a recognized environmental condition.
- An LSI completed in May 2000 identified DROs in soil; and cis-1,2-dichloroethene and 1,2-dichloroethane in ground water beneath the HAMAA property. The results of the investigation were provided to the MPCA, which subsequently issued a No Action Letter and No Association Determination on May 16, 2001. The former release(s) represents an historical recognized environmental condition.
- A storage room formerly used as a darkroom was observed at the property occupied by the Minneapolis Builders Exchange and Hmong American Partnership. It is likely that hazardous substances were used in activities performed in the darkroom and there is a potential for a release to have occurred. This potential represents a recognized environmental condition.

- Based on the review of Sanborn maps and aerial photographs, the Timberland Lumber property has been occupied by a filling station and the presence of one AST has been visually confirmed. (No access was gained to the Timberland Lumber property during the Phase I ESA.) The presence of these facilities and ASTs and the presumed presence of petroleum products at the subject properties represent recognized environmental conditions.
- Soil and ground water impacts were observed during the removal of a UST at the Timberland Lumber property in May 1989. Impacted soil was excavated and a pump-and-treat system was installed. By December 1994, approximately 771 kilograms of petroleum compounds were removed. The MPCA granted closure in June 1996. This former release represents an historical recognized environmental condition of the subject property.”

In November 2002, Delta completed a Phase II ESA of properties located near the Fremont Avenue corridor from 4th Avenue south to Bassett Creek. As part of the Phase II ESA, 14 soil borings (SB-1 through SB-14) were advanced along the western side of Fremont Avenue. Soil boring locations are shown on Figure 2. In general, one soil sample from each boring was collected for chemical analyses for the presence and concentrations of volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), and the 8 RCRA metals. Four groundwater samples also were collected and chemically analyzed for the same parameters as the soil samples. (The metals aliquots from the groundwater samples were not filtered prior to analysis.)

Only two VOCs; 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene; which were both detected in SB-9 at a depth of 16.5 feet to 18 feet below ground surface (bgs); were detected at concentrations above the Residential Soil Reference Values (SRVs). Soil boring SB-9 was advanced near the Timberland Lumber Company, which is a closed Leaking Underground Storage Tank (LUST) site. Benzene; methyl isobutyl ketone; chloroform; and cis-1,2-dichloroethene were detected at concentrations greater than the Soil Leaching Values (SLVs) mostly at depths just above or below the water table. No PAHs were detected at concentrations greater than the Residential SRVs or SLVs. Arsenic and mercury were the only metals detected at concentrations greater than the Residential SRVs or SLVs. Arsenic was detected in soil boring SB-7 at a depth of 4.5 feet to 5.5 feet bgs at a concentration of 13.5 milligrams per kilogram (mg/kg). Mercury was detected in soil boring SB-15 at a depth of 4.5 feet to 6 feet bgs at a concentration of 1.38 mg/kg. Soil analytical results from the 2002 Phase II ESA are summarized in Appendix B.

Two VOCs, ethylbenzene and vinyl chloride, were detected at concentrations greater than the Health Risk Limits (HRLs) in groundwater samples collected from SB-8 and SB-10. No PAHs were detected at

concentrations greater than the HRLs. Selenium was detected at a concentration greater than the HRL in soil boring SB-4; however, metals aliquots were not filtered before analysis. Groundwater analytical results are summarized in Appendix B.

In addition to collection and analyses of samples during the Phase II ESA, Delta also reviewed existing environmental data for the HAMAA and Timberland Lumber Company sites. Figures showing the previous sampling locations and summary analytical tables are included in Appendix B.

In April 2000, a subsurface investigation, which included four soil borings with collection of soil and groundwater samples, was conducted at the HAMAA property. Based on the results of the previous investigations, diesel-range organics (DRO) and mercury were detected in soil at the HAMAA property at elevated concentrations. DRO and 1,2-dichloroethane were detected at elevated concentrations in the groundwater at the HAMAA property.

Beginning in 1989, investigations were conducted to evaluate the magnitude and extent of petroleum contamination from a LUST site at the Timberland Lumber Company property. A groundwater pump and treat system also was operated at the property from 1992 to 1994 during which time an estimated 771 kilograms of petroleum compounds were removed. The results of the investigations indicated that groundwater flow direction was to the north. Based on the results of the investigations, contaminated soil and groundwater are likely located beneath Freemont Avenue.

### **C.1.b Proposed Construction**

Along the Freemont Avenue corridor where the City will be expanding its right-of-way along the existing roadway, contaminants occur mostly at depths adjacent to or immediately above the water table (i.e., approximately 15 feet bgs). Some petroleum contamination has been identified at depths as shallow as 5 feet bgs along Freemont Avenue at the Timberland Lumber Company property. During construction of the roadway, limited amounts of contaminated soil are anticipated to be encountered; however, if deeper utilities are installed near the water table in the future, contaminated soil and groundwater are more likely to be encountered.

## **C.2 Feist Blanchard Property**

### **C.2.a Site Background**

The site was first developed between 1923 and 1939. In 1939, a portion of the site was used for bulk petroleum storage. Approximately 22 aboveground storage tanks (ASTs), ranging in size from 12,000 gallons to 50,000 gallons, were operated by Petroleum Service Company. Between 1950

and 1963, the property at 1131 Second Avenue was used for auto storage. The ASTs were removed between 1966 and 1969. According to the 1966 and 1969 Sanborn maps, an oil warehouse was located at 1131 Second Avenue North, and a chemical wholesaler was located at 1207 Second Avenue North.

According to previous environmental investigations conducted by Delta, the site was divided into five separate rental properties, which were used as warehouse facilities. The properties were used for scrap metal storage, wholesale distributor of new automobile parts, mechanic's shop with parts washer, hazardous material storage area related to a paint booth and mechanic's operations, and storage area for used and new automobile parts. One of the buildings has been vacant since 1984. Historically, the site has been used for auto storage, bulk petroleum storage, and wholesale chemical operations.

In December 2001, Delta completed a Phase I ESA of the site. Based on the findings of the Phase I ESA, Delta reported the following RECs associated with the site:

- Mechanics shop located at 1215 Second Avenue contains a parts washer that uses Stoddard Solvent and a water based parts washer system with an oil/water separator.
- The subject properties have been used as an auto storage facility, a bulk petroleum facility, an oil warehouse, a wholesale chemical facility and a slate warehouse.
- At least 22 ASTs were located on the property from 1939 to 1966.

In June 2003, Delta completed a Phase II ESA in the area, which included a portion of the Feist Blanchard property. As part of the Phase II ESA, two borings were completed on the site (SB-32 and SB-33). Soil samples were collected for chemical analysis from both borings. Groundwater samples were collected for chemical analysis only from SB-33. Soil boring locations are shown on Figure 2.

Based on the results of the Phase II ESA, no contaminants were detected in the groundwater sample at concentrations above HRLs; however, gasoline-range organics (GRO) were detected in the groundwater sample from SB-33 at a concentration of 460 micrograms per liter ( $\mu\text{g/l}$ ) and DRO at a concentration of 120  $\mu\text{g/l}$ .

Elevated concentrations of VOCs and semi volatile organic compounds (SVOCs) exceeding the Tier 1 SRVs and Tier 1 SLVs were detected in the soil samples collected from SB-32 and SB-33. Elevated concentrations of arsenic, thallium, mercury, selenium, DRO and GRO were detected in the soil samples. Tables summarizing the analytical results from the Phase II ESA are provided in Appendix B.

### **C.2.b Proposed Construction**

South of 2nd Avenue, the roadway will be constructed mostly at the existing grade through the Feist Blanchard site, but some shallow soil correction (about 4 feet below existing grade) for geotechnical purposes likely will be required. The City does not yet own the Feist Blanchard site, but is currently negotiating to purchase the property. Following purchase, the site buildings will be demolished and an additional investigation will be conducted to further evaluate contaminants at the site. The additional data will be used to amend the RAP/CCP at that time.

## **C.3 Canadian Pacific Rail Property**

### **C.3.a Site Background**

The Canadian Pacific Rail (CPR) Property is a roughly triangular-shaped parcel bordered on the north by the Feist Blanchard site and 2nd Avenue, on the south by the Scrap Metal Processors site, and on the west by Girard Avenue. During their 2003 Phase I ESA of the area, Delta was unable to gain site access to the property. The 1930 and 1951 Sanborn maps depict the property as vacant, undeveloped land. On the 1951 Sanborn map, oil companies are depicted to the north and south of the property on the adjacent Feist Blanchard and Scrap Metal Processors sites. Historic aerial photographs of the site generally correspond with the Sanborn maps; however, railroad tracks are apparent on the north and south sides of the property on the 1939 and later aerial photographs.

### **C.3.b Proposed Construction**

Roadway construction through the CPR property will involve subgrade excavation to a depth of about 4 feet bgs as part of soil correction activities and construction of an at-grade crossing at the railroad intersection. It is unlikely that access to the CPR property will be gained to conduct environmental or geotechnical assessment prior to construction.

## **C.4 Scrap Metal Processors Property**

### **C.4.a Site Background**

The entire Scrap Metal Processors site includes several properties located between Humboldt and Dupont Avenues North between Second Avenue North and Bassett Creek. Property addresses for the Scrap Metal Processors site include:

- 214 and 210 Humboldt Avenue North
- 1129 and 1221 2nd Avenue North
- 205 Girard Avenue North

Van White Memorial Boulevard will be constructed through the main Scrap Metal Processors parcel located at 1129 2nd Avenue North, which was most recently used as a scrap metal processing yard until December 2003.

According to previous environmental investigations, the scrap yard portion of the Scrap Metal Processors site was developed by 1923 and was first occupied by Hennepin Box Company's box factory and storage facility. By 1939, the box factory building had been removed and three buildings and approximately 21 ASTs were present on the northeastern portion of the site. By 1947, 10 ASTs and 1 building had been removed from the northeastern portion of the site, and 1 building and 2 large ASTs were present on the southwestern portion of the site. Sanborn maps from 1950 and 1952 indicate the Firestone Oil Company occupied the eastern portion of the site while Richards Oil Company occupied the western portion. The approximate areas where ASTs were formerly located is shown on Figure 6.

The Firestone Oil Company operated several ASTs and distillers on the site. Fire department records from 1960 indicate that eight ASTs were approved for installation at the site. The ASTs included three 3,500-gallon lubricating oil tanks, one 3,500-gallon tetrachloroethene tank, one 3,500-gallon petroleum product tank, one 15,000-gallon fuel-oil tank, and two petroleum solvent tanks. In the early 1960s, A&L Laboratories occupied the eastern portion of the site where the Firestone Oil Company was located. (According to a Dun & Bradstreet report, A&L Laboratories currently manufacturers polishes, soaps, and other detergents at their 1001 Glenwood Avenue facility.)

Richards Oil Company, which occupied the western portion of the site, had 2 large fuel-oil ASTs with capacities of approximately 400,000 gallons and 500,000 gallons. Two gasoline ASTs with capacities of 50,000 gallons and 85,000 gallons were also present at the site. Fire department records for Richards Oil Company, formerly Terminal Tank Company, indicate that the City Council approved a 40-foot-diameter, 24-foot-high AST. In January 1949, three No. 6 fuel-oil tanks were approved for the site with capacities between 10,000 gallons and 13,000 gallons. Records indicate that 20 ASTs with capacities ranging from about 10,000 gallons to about 25,000 gallons were installed to store asphalt and heavy fuel oil.

Based on previous investigations, Scrap Metal Processors began operations at the site in 1977. The facility recycled ferrous and non-ferrous metals including aluminum, brass, copper and titanium. The facility also received metal shavings from machining operations. Oils were removed from the shavings and collected in an underground storage tank (UST). The liquid from the UST was then pumped into an oil/water separator. Water was evaporated in the evaporator house located on the east central portion of the site, and the oil was recycled (see Figure 8). Until about 1993, Scrap Metal Processors accepted automobiles for recycling, which reportedly resulted in the spill of automobile fluids and oils.

According to a Minnesota Pollution Control Agency (MPCA) interoffice memo dated January 9, 1997, improper storage of waste batteries, polychlorinated biphenyl (PCB) containing materials, open burning of copper wire, and improper disposal of ash from an aluminum smelter also reportedly occurred at the site.

Until late 2003, several piles of different types and grades of metals were located throughout the scrap yard. An aluminum turning slab is located in the southwest corner of the yard near the main entrance for the scrap yard (see Figure 8). The concrete slab is approximately 18 inches thick and was used to collect fluids generated during shearing. Fluid collected by the slab was pumped into a tank and processed in the evaporator building located on the east side of the scrap yard. A former steel shed, which was located in the western portion the scrap yard, housed the drive unit for the baler and reportedly had a dirt floor (see Figure 8). Adjacent to the building was a storage area for drums of drain oil. A scale and former scale house were located south of the baler building (see Figure 8). Further to the east are two concrete turning slabs, one for steel and one for electric motors (see Figure 8). Each floating slab is 24 inches thick and is underlain by a geo-membrane and clay liner. The slabs are plumbed into a holding tank in the adjacent evaporator building. Fluids collected by the slabs ran into an oil/water separator and the oil was collected in barrels. The remaining water was evaporated. The eastern portion of the scrap yard was primarily used for empty bin storage, because zoning classification for that portion of the site did not allow scrap metal processing activities. According to a representative from Scrap Metal Processors, the site is underlain with a layer of fly ash to prevent vertical migration of fluids.

Currently, the site is mostly vacant; however, the turning slabs, evaporator building, oil/water separator, holding tank and scale are still present.

According to regulatory information reviewed during the 2001 Phase ESA, two ASTs, one 250-gallon waste-oil and one 250-gallon fuel-oil tank, were used at the property by Scrap Metal Processors. Several spills have been reported at the Scrap Metal Processors site including:

- 50-gallon spill of drain oil in April 1993
- 200-gallon spill of cooling oil in May 1994
- 100-gallon spill of cooling oil in August 1995
- 200-gallon spill of diesel fuel in December 1996

In October 1996, there was a fire at the site when a pile of electric motors and insulation ignited.

Environmental investigations conducted at the site have indicated that impacted soil and groundwater are present at the site. During an October 1999 inspection of the site, Hennepin County collected several soil and product/oil samples from the site presumably from near the evaporator house and turning slabs. Laboratory analytical testing of the soil samples indicated the following contaminants were present in site soils: DRO at 1,200 mg/kg; PCBs at 90.5 mg/kg; lead at 660 mg/kg; and mercury at 2.4 mg/kg.

In 2003, Delta conducted a Phase II ESA of the Scrap Metal Processors site, which included the following:

- Advancement of 16 soil borings at the site (see Figure 2)
- Installation of 5 groundwater monitoring wells (see Figure 2)
- Collection and chemical analyses of 49 soil samples
- Collection and chemical analyses of 20 groundwater samples from the monitoring wells and soil borings

The results of the Phase II ESA conducted by Delta indicated widespread metals contamination across the site. The concentrations of metals are generally above the Industrial SRVs established by the MPCA and appear to be associated with a layer of fly ash, which is present approximately 1 foot bgs, across the entire site. The thickness of the fly ash was not reported, but is assumed to be about 1 foot thick based on information provided by Delta. Scrap Metal Processors representatives stated that they placed the fly ash to prevent the vertical migration of fluids related to Scrap Metal Processors' operations. Concentrations of metals detected at the 1 foot sampling intervals include: lead at 1,530 mg/kg, arsenic at 39.2 mg/kg, chromium at 4,870 mg/kg, and mercury at 4.67 mg/kg. The Industrial SRVs for these compounds are 700 mg/kg, 25 mg/kg, 425 mg/kg, and 2 mg/kg, respectively.

In addition to the metals-impacted soil, several areas with VOC, PAH, DRO, GRO, and PCB impacts also were identified. Contaminants detected at concentrations above their respective Industrial SRVs included the following: 1,2,4-trimethylbenzene; benzene; total xylenes; naphthalene; and the benzo(a)pyrene equivalent, which is a calculated value based on the concentrations of carcinogenic PAHs detected in each sample. Depths at which these contaminants were detected at elevated concentrations ranged from 1 foot to 7.5 feet bgs.

Although groundwater samples were collected during the Phase II ESA, only benzene, antimony, nickel, and thallium were detected at concentrations above the Minnesota Department of Health (MDH) HRLs. Liquid-phase petroleum (i.e., "free product") or a sheen on top of groundwater was observed in borings advanced in the central portion of the site where no monitoring wells are located.

Tables summarizing the analytical results from previous environmental investigations are provided in Appendix B.

In 2004, the COE completed a Phase II ESA along the proposed route for Van White Memorial Boulevard. As part of the investigation, two soil borings (labeled 03-15M and 03-16M) were advanced on the south-central portion of the site within the proposed roadway. The soil boring locations are shown on Figure 2. Soil samples were collected from the soil borings and chemically analyzed. The analytical results for soil samples collected from 8 feet to 10 feet bgs indicate that arsenic, petroleum-related VOCs, and carcinogenic PAHs are present at the soil boring locations at concentrations greater than the Residential SRVs. Concentrations of petroleum-related VOCs and the BaP equivalent also exceeded Industrial SRVs. During the COE Phase II ESA, no compounds were detected in the groundwater samples collected from the borings at concentrations greater than their respective HRLs.

#### **C.4.b Proposed Construction**

As part of geotechnical soil correction activities associated with construction of the roadway, the upper 4 feet to 6 feet of soil will be removed on the northern side of the Scrap Metal Processors site. The excavation will include removal of scrap metal that is buried near the surface and was left on site by Scrap Metal Processors and removal of the fly ash layer which, based on previous environmental investigations, contains elevated concentrations of metals above the Industrial SRVs. In addition to the fly ash layer, environmental investigations have indicated that near surface soils at the site are impacted with VOCs, PAHs, metals, and PCBs.

On the southern portion of the Scrap Metal Processors site, an embankment will be constructed. Preliminary roadway design plans, including embankment construction details, are included in Appendix C.

The proposed response actions for the Scrap Metal Processors site include the following:

- Additional analytical testing to further evaluate soil quality at the site. The additional testing also will include analyses using the Toxicity Characteristic Leaching Procedure (TCLP) to evaluate if contaminants including lead and mercury are present at hazardous concentrations.
- Removal and proper disposal of the turning slabs and evaporator house and associated sump and holding tank.
- Rough grading and placement of a crushed concrete cap.
- Possible on-site stabilization of soil impacted with hazardous concentrations of metals, prior to off-site disposal as industrial waste or on-site reuse subject to MPCA approval.

## **C.5 Special School District #1 Property**

### **C.5.a Site Background**

The portion of the Special School District #1 site where the proposed boulevard will be constructed consists of the southwest corner of the property located at 1001 Second Avenue North. This portion of the site is bordered to the northwest by the former channel for Bassett Creek with Scrap Metal Processors located beyond, to the east by a chain link fence with an asphalt-paved parking lot for the Minneapolis Special School District No. 1 transportation center located beyond, and to the south by Bassett Creek. Currently, no structures are present on the site.

Beginning in 1913, portions of Bassett Creek were rerouted to an underground tunnel to control flooding. According to previous environmental investigations, between 1923 and 1939, an inlet to the Bassett Creek Tunnel was built on the Special School District #1 site. Beginning in 1992, the use of the old Bassett Creek Tunnel and the portion of Bassett Creek running adjacent to the site were significantly reduced when the main Bassett Creek channel was rerouted by the Corps of Engineers into a new tunnel because of flooding.

According to aerial photographs and Sanborn fire insurance maps, up to 10 asphalt ASTs were present at the site between 1947 and 1961. According to the City of Minneapolis Fire Department records, Richards Oil Company submitted an application to install eight 25,000-gallon asphalt tanks and one 6,000-gallon asphalt tank on the south side of Bassett Creek. The approximate locations of the ASTs are shown on Figure 6.

According to previous environmental investigations, the eastern portion of the Special School District #1 site, which will not be part of the construction area, is currently used as a transportation center for the school district. According to Sanborn fire insurance maps, the eastern portion of the site was occupied in 1912 by the Northwestern Fuel Company. By 1963, the eastern portion was occupied by Northwestern Auto Parts Company and a machine shop. According to regulatory records, a closed LUST site (ID# 6830) is associated with the eastern portion of the Special School District #1 site. In addition, a regulatory search indicated that three active USTs, which contain gasoline and fuel oil, were registered at the site. Records indicate that nine USTs were removed from the property and one 550-gallon motor oil UST was abandoned in place in May 1998.

To evaluate environmental conditions within the proposed roadway, two soil borings, SB-39 and SB-40, were advanced at the site during the 2003 Phase II ESA. In soil boring SB-40, orange staining and cinders were observed at a depth of 5 feet bgs. An analytical soil sample collected from this depth contained the following contaminants: DRO was detected at 32 mg/kg; arsenic detected at 39.2 mg/kg;

lead detected at 1,530 mg/kg; and mercury detected at 2.51 mg/kg. The concentrations of arsenic, lead and mercury detected exceed the SRV established by the MPCA for industrial land use. Soil boring locations are shown on Figure 2 and tables summarizing the results of the investigation are provided in Appendix B.

In 2004, the COE completed a Phase II ESA investigation along the proposed route for Van White Memorial Boulevard. As part of the investigation, three soil borings (labeled 03-12M through 03-14M) were advanced on the site within the proposed roadway (see Figure 2). Soil samples were collected from the soil borings and chemically analyzed. The analytical results for soil samples indicate the following:

- Arsenic; lead; 1,2,4-trimethylbenzene; and carcinogenic PAHs were detected at concentrations greater than the Residential SRVs in soil boring 03-12M at a depth of 7 feet to 8 feet bgs. Lead and 1,2,4-trimethylbenzene also were detected at concentrations greater than the Industrial SRVs.
- Arsenic, chromium, and carcinogenic PAHs were detected at concentrations greater than the Residential SRVs in soil boring 03-13M at a depth of 7 feet to 8 feet bgs. The BaP equivalent also exceeded the Industrial SRV.
- Arsenic and lead were detected at concentrations greater than the Residential SRVs in soil boring 03-14M at a depth of 2 feet to 4 feet bgs. Arsenic also was detected at a concentration exceeding the Industrial SRV.

During the COE Phase II ESA, no compounds were detected in the groundwater samples collected from the three borings at concentrations greater than their respective HRLs.

#### **C.5.b Proposed Construction**

South of the Scrap Metal Processors site, the roadway will be built on an embankment over the former Bassett Creek channel and most of the Special School District #1 property. Details regarding embankment construction are provided in Appendix C. Portions of these properties where the roadway will be located are currently vacant. Construction of the roadway will involve mostly fill activities; however, through this portion of the project area, a dam and weir overflow system from the new creek channel into the former channel that is currently located beneath the proposed roadway will be removed, the former channel will be deepened, and a new overflow system will be constructed to the east of the proposed road. On the southern portion of the Special School District #1 property, excavation activities will be conducted during installation of a bridge abutment, which will be supported on driven piles. During excavation, dewatering likely will be required.

The Special School District #1 site was previously occupied by asphalt ASTs and was historically flooded by Bassett Creek. As a result, documented metals, PAH, and VOC contamination of soils is present and relatively widespread at the site. Analytical testing for the 8 RCRA metals using the TCLP is currently planned for the site because concentrations of lead as high as 2,070 mg/kg have been detected during previous environmental investigations suggesting possible hazardous concentrations. Response actions will include possible on-site stabilization of metals impacted soil prior to off-site disposal as industrial waste or on-site reuse.

## **C.6 Northern States Power/Xcel Energy Property**

### **C.6.a Site Background**

According to the 2001 Phase I ESA completed for the area by Delta, the Northern States Power/Xcel Energy property is mostly vacant with the exception of an electrical tower located on the west side of Girard Avenue. Based on our review of the aerial photographs and Sanborn maps, the site has not been developed, but Bassett Creek historically ran through the property prior to 1992.

### **C.6.2 Proposed Construction**

As part of the construction of Van White Memorial Boulevard, a bridge abutment for the bridge structure that will cross Bassett Creek will be constructed on the Northern States Power/Xcel Energy property. Construction of the abutment will involve excavation of potentially contaminated soil from the former Bassett Creek channel and dewatering during installation of deep piles that will support the abutment.

## **C.7 City of Minneapolis Impound Lot**

### **C.7.a Site Background**

Since the late 1980s, the City has used the property as the Impound Lot with the main office building located in the northeast corner of the site. The car storage area occupies most of the remainder of the Impound Lot.

Historically, the site was occupied largely by the Irving Avenue Dump, which according to an executive summary for a preliminary assessment under the Federal Superfund Program prepared by the MPCA dated June 29, 1984, the dump was roughly located between Colfax Avenue on the east, Logan Avenue on the west, Bassett Creek on the north, and the Burlington Northern Santa Fe Railroad tracks on the south. The area began to be used as a dump from about the 1930s until at least 1984.

The MPCA executive summary states the following:

- It is believed that the site began operating as a dump around 1930 and has continued up to the present.
- Napco Industries Inc. used the site in the 1950s and 1960s as a storage area for batteries, oil, gasoline and surplus equipment.
- Municipal staff recalls seeing tons of pried open batteries next to the creek.
- The site near the Colfax Street end of the property is the old site of Richards Oil.
- The Army Corps of Engineers observed 1 to 2 feet of tar-saturated soils while test trenching and taking borings on the site.
- The site has been used as a demolition and debris site for concrete, bricks, cinders and other materials since 1964.
- It is alleged that Leef Industrial Laundry and Hollywood Candy disposed of barrels of waste at the site.
- It is alleged that oil and battery acid spills from Warden Oil and a local scrap yard, respectively, were deposited on the site during high water periods on Bassett Creek.

Numerous environmental investigations and phases of investigation have been performed at the Impound Lot/Former Irving Avenue Dump site since 1987. Most of the investigation activities have focused on the Former Irving Avenue Dump Site, which includes the western portion of the Impound Lot.

Investigations have included performing soil borings and test pits, installing groundwater monitoring wells, chemically analyzing soil and groundwater samples, sampling the water quality in Bassett Creek and sampling seeps along Bassett Creek. Soil and groundwater contamination has been identified at the Former Irving Avenue Dump Site and Impound Lot.

Information concerning the environmental conditions of the Impound Lot/Former Irving Avenue Dump portion of the site was obtained from borings performed by the COE in 1980, 1982, and between 1987 and 1989; test pits conducted by the COE in July 1982; soil and stream sediment samples collected by the COE in August 1983; soil borings and monitoring wells installed by Barr in February 1988, August 1989, October 1989 and June 1994; soil borings and monitoring wells installed by TCT in May 1986; and soil borings performed by Braun Intertec in January 1999. The approximate sampling locations are shown on Figure 3.

Contaminants identified in soil samples collected from the Impound Lot/Former Irving Avenue Dump site include metals, VOCs, PAHs, and PCBs.

High levels of PAHs have been found in soil samples collected from the Impound Lot/Former Irving Avenue Dump site. A soil sample collected from a depth of 12 feet in boring B-7, located about 100 feet west of the roadway, had total PAHs greater than 150 mg/kg. Samples from test pits 82-73TP, 82-74TP and 82-78TP (which was located about 60 feet east of the proposed roadway) all had total PAH concentrations greater than 100 mg/kg. A surface sample collected near the railroad tracks, 82-80TP, exhibited significantly lower levels of PAHs, (12.3 mg/kg), suggesting that the PAH contamination may be associated with waste disposal activities rather than general railroad operations (Barr, 1986).

Soils in the Impound Lot/Former Irving Avenue Dump site area have been analyzed for metals contamination. Elevated concentrations of cadmium, copper, lead, mercury and zinc were found in soil samples collected from the test pits conducted by the COE. No arsenic, antimony or selenium was detected. The primary metal contaminant in soils is lead. Samples collected north of the Impound Lot/Former Irving Avenue Dump site had lead levels, which failed the extraction procedure (EP) toxicity leach test and might be considered hazardous waste. Samples collected from the Impound Lot/Former Irving Avenue Dump site also exhibited high levels of total lead, and although these samples were not subjected to the EP leach test, the total lead levels are high enough to estimate that many of the samples would not have passed the EP leach test (Barr, 1986).

Eleven "randomly located" test pits were dug with a backhoe by the COE in July 1982. The purpose of the test pits was to characterize soil and groundwater contamination conditions for planning purposes associated with the planned construction of the Bassett Creek tunnel inlet and ponding area. The test pits were dug to an average depth of 7 feet. Soil and groundwater samples were obtained from the resulting excavations. Two of three soil samples collected from the COE test pits and analyzed using the EP leach test failed the test for lead. The EP test leachates also exceeded the 1986 National Water Quality Criteria for protection of aquatic organisms from acute toxicity due to copper, lead and zinc (Barr, 1989).

Three of twelve soil samples collected from the eleven COE test pits had detectable levels of PCBs. PCBs were detected in both the soil and surface soil samples at Test Pit 82-71 and in the soil sample at Test Pit 82-72 (Barr, 1989).

VOCs have been detected at low levels in soil and do not appear to have impacted groundwater quality (Barr, 1989).

Additional testing of 62 soil and stream sediment samples was conducted by the COE in August 1983 at 47 sites along the creek channel. The samples were analyzed for leachable metals, pesticides and herbicides. Pesticides and herbicides were not detected. Lead concentrations in the leachate from

5 of the 62 samples exceeded the RCRA criteria for hazardous waste designation. In the most highly contaminated area, the deepest samples were more highly contaminated than the shallower samples (Barr, 1989).

During collection of soil samples 13 to 15 and stream sediment samples 42 to 46 by the COE, an oil-based substance was observed. One groundwater (83-3-49), one stream sediment sample (83-3-51) and two soil samples (83-3-48 and 83-3-50) were subsequently collected in September 1983 in the area where the oil-based substance had been observed. These samples were analyzed for VOCs and PAHs. Toluene and 1,1,1-trichloroethane were detected at low parts per billion (ppb) concentrations in the soil and stream sediment samples. Benzene and 1,1-dichloroethane were detected at low ppb concentrations in one of the soil samples. PAHs were detected in the soil, stream sediment and groundwater samples. Pentachlorophenol was detected in both soil samples. In addition, the groundwater sample was analyzed for metals, total phenols and cyanides. Mercury was detected in the groundwater sample at a concentration of 3 µg/l and the lead concentration was 1,100 µg/l; 55 times greater than the MDH Recommended Allowable Limit (RAL) (Barr, 1989b).

As the City of Minneapolis considered acquiring property (for the Impound Lot) owned by Burlington Northern Santa Fe on the eastern portion of the Former Irving Avenue Dump Site, the City of Minneapolis Department of Public Works had analysis performed on four soil and two groundwater samples collected from the western edge of the Burlington Northern Santa Fe property in March 1986. The soil sampling sites were labeled 1 through 4, and the groundwater sampling sites were labeled 3A and 4A. All samples were analyzed for herbicides, pesticides, PCBs and creosote; additionally, the soil sample from Location 1 and the groundwater sample from Location 4A were analyzed for PAHs. No herbicides, pesticides, PCBs or creosote were detected in any of the samples. PAHs were detected in both the soil sample (2.6 mg/kg of carcinogenic PAHs) and groundwater sample (210 µg/l of carcinogenic PAHs) (Barr, 1989).

In May 1986, TCT collected and analyzed soil samples from five 20-foot-deep borings, labeled B6 through B10, and one monitoring well, labeled MW5. PAHs were detected in the soil samples collected from 12 to 13.5 feet in B9 and B10. The soil sample from a depth of 12 to 13.5 feet in B7 contained 90 mg/kg of carcinogenic PAHs (Barr, 1989).

In February 1988, Barr collected soil samples from five 3-foot-deep borings labeled SB88-1 through SB88-5. The samples were analyzed for total metals, leachable metals (EP-toxicity leach test), PAHs, phenols, VOCs and PCBs. None of the samples failed the leach test. PAHs were detected in the soil samples with the highest concentration being 20.5 mg/kg carcinogenic PAHs in the sample from SB88-4.

1,1,1-trichloroethane was detected in the soil samples from SB88-4 and SB88-5 at concentrations of 0.083 and 0.071 mg/kg, respectively. Trichloroethylene was found in the soil sample collected from SB88-4 at 0.099 mg/kg. No other VOCs or phenolic compounds were detected. PCB-1254 was detected in the soil sample from SB88-3 at a concentration of 0.13 mg/kg (Barr, 1989).

As part of a preliminary geotechnical and limited environmental assessment for a proposed roadway and bridge across the site, which would connect the southern end of Girard Avenue North to the northern end of Dunwoody Boulevard, Braun Intertec performed seven standard penetration test borings in January 1999. Three of the seven borings, ST-3, ST-4, and ST-5, were performed on the Impound Lot/Former Irving Avenue Dump site. Soil samples were observed for the presence of visual and olfactory evidence of contamination and screened for the presence of organic vapors with a photoionization detector (PID) equipped with a 10.6-eV lamp. No visible discoloration, odors, or elevated PID readings were detected in the borings. Soil samples were collected from Borings ST-3, ST-4 and ST-5 for analysis of the eight RCRA metals. None of the metals detected exceeded the applicable MPCA Residential SRVs (Braun Intertec, 1999).

In April 2004, the COE conducted a Phase II ESA, which included advancement of three soil borings along the proposed route for Van White Memorial Boulevard through the Impound Lot (i.e., soil borings 04-17M, 04-18M, and 04-19M). During the Phase II, soil samples were collected from a depth of 6 feet to 8 feet bgs from each of the three borings for chemical analyses. The analytical results for soil samples indicate the following:

- In the investigative and/or duplicate soil sample collected from soil boring 04-17M, concentrations of arsenic; lead; cumene; n-propylbenzene; and 1,2,4-trimethylbenzene were detected at concentrations exceeding the Residential SRVs. Concentrations of arsenic; lead; n-propylbenzene; and 1,2,4-trimethylbenzene detected exceeded Industrial SRVs.
- In soil boring 04-18M, the concentration of arsenic detected exceeded the Residential SRV, but not the Industrial SRV.
- In soil boring 04-19M, the concentrations of arsenic, cadmium, and lead detected exceeded the Residential SRVs. The concentration of lead detected exceeded the Industrial SRV.

During the COE Phase II, no compounds were detected in the groundwater samples collected from the three borings at concentrations greater than their respective HRLs.

In addition to soil investigations, several groundwater samples have been collected from the Impound Lot/Former Irving Avenue Dump site.

Groundwater samples were collected from the test pits dug by the COE. The analytical results showed limited contamination by heavy metals or VOCs. Two of the test pit groundwater samples were analyzed for and exhibited elevated levels of PAHs. One of the test pit groundwater samples exhibited low levels of PCBs, which were in excess of the MDH RALs (Barr, 1990).

In May 1986, TCT installed an 11-foot-deep monitoring well labeled, MW5. Analysis of a groundwater sample collected from MW5 in May 1986 indicated the sample contained 32.7  $\mu\text{g/l}$  of carcinogenic PAHs, well in excess of the RAL of 0.028  $\mu\text{g/l}$  (Barr, 1989).

In October 1989, Barr installed 6 shallow monitoring wells labeled MW1, MW2, MW3, MW4, MW6 and MW7, ranging in depth from 13 to 20.5 feet at the Impound Lot/Former Irving Avenue Dump site. A deep (29.8 feet) monitoring well, MW105, was installed adjacent to MW5 in October 1989 in order to evaluate both the groundwater quality below the swamp deposits and vertical groundwater gradients. Groundwater samples collected from the monitoring wells in November 1989 and January 1990 were analyzed for PAHs, metals, VOCs, PCBs and general parameters. All metal concentrations were below the U.S. Environmental Protection Agency (EPA) Maximum Contaminant Levels (MCLs) and MDH RALs for drinking water. No PCBs were detected. A few VOCs, including benzene; 1,1- and 1,2-dichloroethane; ethyl ether; methylene chloride; 1,1,1-trichloroethane and trichlorofluoromethane were detected in the ppb range well below the MCLs and RALs. PAHs were detected at concentrations exceeding the RALs. The incidence of VOCs and PAHs was scattered across the Impound Lot/Former Irving Avenue Dump site with no pattern that would indicate a contaminant plume (Barr, 1990).

#### **C.7.b Proposed Construction**

South of Bassett Creek through the City of Minneapolis Impound Lot/Former Irving Avenue Dump, the roadway elevation will increase about 20 feet above the existing grade requiring construction of a large embankment. Construction of the embankment will take about 6 months. The top of the embankment will be surcharged with about 10 feet of soil to encourage compaction and limit long-term settlement of underlying organic soils for about one year. Details regarding embankment construction are included in Appendix C.

To further encourage compaction of the underlying organic soils, wick drains will be installed with a 4-foot spacing underneath the embankment. Each wick drain consists of a perforated plastic core that is encased in geotextile fabric. As the underlying organic soils are compacted by the weight of the embankment and the surcharge, the wick drains act as a pathway for drainage of excess water from the organic soils. The wick drains will extend from the ground surface through the underlying fill, organic soil, and fat clay with the base of the wick drains terminating in the course grained lower terrace deposits, which consist of clayey, silty sand. Additional details regarding construction of the wick drains is included on Sheets 15 and 16 of the preliminary design plans provided in Appendix C.

To prevent seepage of groundwater that is removed through the wick drains, a 3-foot layer of granular material will be installed at the base of the embankment. The granular layer was designed to hold the excess water in the pore space allowing the groundwater to infiltrate back down into the ground beneath the embankment. A clay dam also will be constructed around the perimeter of the embankment to prevent seepage of the groundwater laterally outside of the embankment footprint and onto the ground surface. The clay dam will be 6 feet high with 2 feet of the structure extending below the existing ground surface. The thickness of the dam will vary from 3 feet at the top to 7 feet at the base. Details regarding construction of the dam are shown on Sheet 5 of the preliminary design plans included in Appendix C.

On the southern portion of the Impound Lot, expanded polystyrene (EPS) blocks will be installed as a transition between the bridge over the Burlington Northern Santa Fe Railroad and the embankment. The transition zone will be about 50 feet long. Use of the EPS as lightweight fill will act as a buffer zone between the pile supported bridge structure, which is rigid and will not change grade over time and the embankment, which will consolidate somewhat over time. To account for the weight of the EPS and thereby limiting settlement of the underlying soils, about 4 feet of existing soil will be subcut prior to installation of the EPS. Based on the results of the Phase II ESA conducted by the COE in 2004, elevated concentrations of arsenic; lead; n-propylbenzene; and 1,2,4-trimethylbenzene were detected in soil in the area where the EPS and the bridge abutment will be installed. Response actions will include additional testing of the soil to evaluate if the metals concentrations are hazardous and possible on-site stabilization of metals impacted soil prior to off-site disposal as industrial waste or on-site reuse.

### **C.8 Burlington Northern Santa Fe Railroad Property**

A second bridge structure will be constructed on the south end of the Impound Lot in order to cross over the existing Burlington Northern Santa Fe Railroad. No excavation of the Burlington Northern Santa Fe Railroad property is proposed except for excavation for pile caps. No soil impacts are anticipated, however, the CCP will be implemented during excavation activities.

### **C.9 City of Minneapolis Linden Yards Site**

#### **C.9.a Site Background**

The Linden Yards site consists of a strip of undeveloped land, which is owned by the City and presently is used as an equipment and construction material storage yard. Available historical-use information indicates that the site was previously a railroad yard. A large grain mill was located in the eastern portion of the site from before 1885 to the mid-1970s. A coal-gas holder tank historically was located adjacent to and southeast of the portion of the site where the grain mill was located.

In June 1998, Braun Intertec completed a Phase I ESA of the Linden Yards site for the City. Based on the results of the Phase I ESA, the following RECs were identified:

- Available historical-use information indicated that although no railway maintenance facilities were located at the site, the site historically was occupied by railroad tracks and grain elevators where potentially hazardous chemical storage and use activities may have occurred. It is possible that these prior uses may have adversely impacted soil and groundwater at the site.
- An apparent AST was located adjacent to and north of the grain elevator facility on the 1938 to 1960 aerial photographs.
- Wood debris and soil dumping were apparent in the place of the former elevator building on the 1978 and 1987 aerial photographs.
- On the 1993 aerial photograph apparent excavation and dumping activities were noted in the area southwest of the pedestrian overpass bridge.
- The current use of the site as a materials storage yard by the City of Minneapolis, includes stockpiling of concrete rubble from City sidewalk and road projects, it is possible that some contaminated soils from unknown sites across the City could have been imported with the concrete rubble and placed on the site.
- The site is used as a stockpile location for compost and topsoil. It is possible that potentially contaminated soil or compost material may have been incorporated into these stockpiles. The compost and topsoil stockpiles are located in an unsecured part of the site.
- Suspected asbestos-containing materials (ACM) were observed in site debris. The positive identification of this material as ACM has yet to be determined.

Following the Phase I ESA, a Phase II ESA was conducted. The RECs identified during the Phase I ESA were located outside of the proposed right-of-way for Van White Memorial Boulevard. The proposed route for Van White Memorial Boulevard is in an area that was used for construction equipment storage at the time of the Phase I ESA. During the Phase II ESA, nine soil borings were advanced and soil and groundwater samples for chemical analyses were collected. Soil boring locations are shown on Figure 3. Based on the results of the Phase II ESA, no VOCs, PAHs, DRO, or GRO were detected above the laboratory reporting limits in soil samples collected near the proposed roadway (i.e., from soil borings ST-3 and ST-5).

As part of the 2004 Phase II ESA conducted by the COE, one soil boring, 04-20M, was advanced on the northern edge of the Linden Yards site. Based on the results of analytical testing, no compounds were detected at concentrations greater than the Residential SRVs in a soil sample collected from the boring, and no compounds were detected in the groundwater sample collected from this boring at concentrations greater than the HRLs.

#### **C.9.b Proposed Construction**

On the north side of the Linden Yards site, a bridge abutment for the southern end of the bridge crossing the Burlington Northern Santa Fe Railroad property will be constructed. South of the bridge abutment, a transition zone with EPS blocks will be constructed between the bridge abutment and an embankment. The transition zone will be about 50 feet long. Beneath the EPS transition zone, about four feet of soil will be subcut to limit settlement of the underlying soils. South of the transition zone, an embankment will be constructed, which will slope to the south allowing the roadway to cross beneath Interstate 394 and connect with Dunwoody Boulevard. Details regarding embankment construction are included in Appendix C. No response actions are currently anticipated on the Linden Yards property.

#### **C.10 Use of Fill from Off-Site Sources**

As part of the site redevelopment, fill will be imported to the site to raise the grade north of Bassett Creek and to construct the embankments. Fill sources will be considered on a case-by-case basis and evaluated for the potential presence of contaminants in the material. If the fill source is from a site with no environmental concerns, such as native pit run material or from a residential development with no USTs or other environmental concerns, no analytical testing of the material will be conducted.

Acceptance of fill from other sources with potential environmental concerns will be made on a case-by-case basis with input from the MPCA and the City. As part of the decision making process, the land-use history of the source facility will be evaluated, existing environmental reports will be reviewed, the geotechnical suitability of the material will be assessed, and existing analytical data will be reviewed. If additional analytical testing of the material is deemed warranted after consultation with the City and MPCA, samples will be collected at a frequency of at least one sample per 1,500 cubic yards of material. Analytical parameters will be determined based on historic use of the source facility and the contaminants of concern for the area of the Van White Memorial Boulevard site where the fill will be placed. Soil reuse criteria will follow those included in Section F.4. Screening of fill soils as they are loaded into trucks from the source facilities will be conducted on a case-by-case basis and in accordance with the procedures in Section F.

## **D. Additional Investigation of Scrap Metal Processors and Special School District #1 Sites**

Prior to construction of Van White Memorial Boulevard, an additional investigation of the main parcel of the Scrap Metal Processors site and the westernmost portion of the Special School District #1 site will be conducted. The objective of the investigation is to further evaluate areas of the two sites where the proposed Van White Memorial Boulevard will be constructed. Shallow soil on the western portion of the Scrap Metal Processors site also will be further evaluated before the area is used for material staging during construction of the boulevard.

Specifically, the objectives of the additional assessment are as follows:

- Further evaluate the upper 4 feet of soil along the proposed boulevard through the Scrap Metal Processors site that will be removed as part of road construction.
- Further evaluate soil deeper than 4 feet beneath the proposed roadway through the Scrap Metal Processors site that will not be excavated.
- Further evaluate surface and near surface soil on the western part of the Scrap Metal Processors site where materials will be staged during construction.
- Further evaluate groundwater quality near the former and existing Bassett Creek Channels that will be dewatered during excavation activities during construction of bridge abutments.
- Evaluate soil/sediment quality in the area where a new overflow channel will be constructed and along the former Bassett Creek channel where the streambed will be deepened.
- Evaluate the concrete and the surrounding soil near the turning slab on the southwest side of the Scrap Metal Processors site and the turning slabs and evaporator house on the central portion of the Scrap Metal Processors site so that they can be removed and properly disposed of as part of construction of Van White Memorial Boulevard.

The following sections describe the scope of work, procedures, and equipment required to perform the proposed investigation activities at the site.

### **D.1 Soil Evaluation**

As part of the additional investigation, soil borings and test pits will be performed to obtain soil samples for visual inspection, on-site monitoring, and chemical analyses. Braun Intertec will stake the boring and test-pit locations, survey the locations using Global Positioning System equipment, and coordinate the clearing of private and public utilities.