June 1996

Weller Creek Streambank Stabilization Report



Village of
Mount Prospect



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& Infrastructure

WELLER CREEK

STREAMBANK STABILIZATION REPORT

Prepared for:

VILLAGE OF MOUNT PROSPECT, ILLINOIS

June 1996

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EXECUTIVE SUMMARY

The Weller Creek Streambank Stabilization project addressed erosion problems along Weller Creek from Central Road to School Street in the Village of Mount Prospect, Illinois.

The Weller Creek Streambank Stabilization Report provides information on the causes of Weller Creek erosion and the development of a streambank stabilization plan. Key components of the process to develop this plan were the erosion assessment of the study area, hydraulic analysis of Weller Creek, public involvement program, prioritization of improvements, implementation cost estimates, funding options, and easement jurisdiction.

The streambank erosion assessment was conducted by Village staff and Rust specialists in channel stability. The hydraulic analysis involved a computer analysis of flood heights and flow characteristics in Weller Creek. The public involvement program was implemented to inform area residents streambank stabilization requirements, and to assure that residents' concerns were addressed in the plan. The recommended improvements have been prioritized, so the segments to be stabilized first are those with the most severe erosion.

A combination of stabilization methods are recommended to repair existing erosion conditions and prevent future erosion. Bioengineering techniques, which combine native vegetation with structural components, is the proposed solution to most erosion along Weller Creek. Where access is limited monoslab paver blocks are recommended on the creek bottom. At severe erosion locations, sheet piling or retaining walls must be incorporated with the bioengineering methods. The successful establishment of native vegetation requires the selective removal and pruning of trees along the channel. Many trees are undercut and will eventually fall and cause damage to nearby structures or utilities; removal of these trees is recommended.

The plan also includes estimated implementation costs broken down into four reaches. The implementation costs for the reach of Weller Creek between School Street and Elmhurst Road is estimated to be $2,709,900. The segments from Elmhurst Road to See-Gwun Avenue and from See-Gwun Avenue to Lincoln Street have implementation costs of approximately $769,900 and $309,600, respectively. For the section between Lincoln Street and Central Road, the estimated implementation cost is $616,700. Implementation costs for all four reaches total $4,406,100.

State and federal programs offer grants for a percent of the total cost of qualified projects. An application was submitted to the Illinois Environmental Protection Agency for consideration of a Section 319 grant. Special assessments, special service areas or bonds are others funding possibilities.

The ownership and easement jurisdiction along Weller Creek are very complex. The property lines of several individual lots extend to the centerline of the original channel; erosion has altered the actual centerline, but the property lines remain as originally platted. Drainage and sewer easements cross property lines as well as the channel. Overall, according to Illinois Drainage Law, the Village has the right and responsibility to maintain the channel regardless of ownership.

INTRODUCTION

The Weller Creek Streambank Stabilization project addressed erosion problems along Weller Creek from Central Road to School Street in the Village of Mount Prospect, Illinois. Rust Environment & Infrastructure, under the direction of Mount Prospect Department of Public Works staff and the citizens' Weller Creek Ad-Hoc Committee, investigated the erosion problems, recommended solutions, prepared conceptual plans, and produced this project report. Causes of the erosion and future problems due to upstream development were also investigated. An application for funding assistance was submitted to the Illinois Environmental Protection Agency (IEPA) for consideration of a Nonpoint Source Pollution Control Program grant for construction.

This report provides information on the causes of Weller Creek erosion and the development of a proposed streambank stabilization plan. Key components of the process to develop this plan were the erosion assessment of the study area, a hydraulic analysis of Weller Creek, public involvement program, prioritization of improvements, implementation cost estimates, funding options, and easement jurisdiction.

The streambank erosion assessment was conducted by Village staff and Rust specialists in channel stability. The assessment identified reaches where the banks were deteriorating and the best methods to protect and restore them. The hydraulic analysis involved a computer analysis of flood heights and flow characteristics in Weller Creek. The hydraulic analysis was necessary to determine required bank protection elevations and flow velocities and to evaluate the impacts of combined sewer system modifications in Arlington Heights.

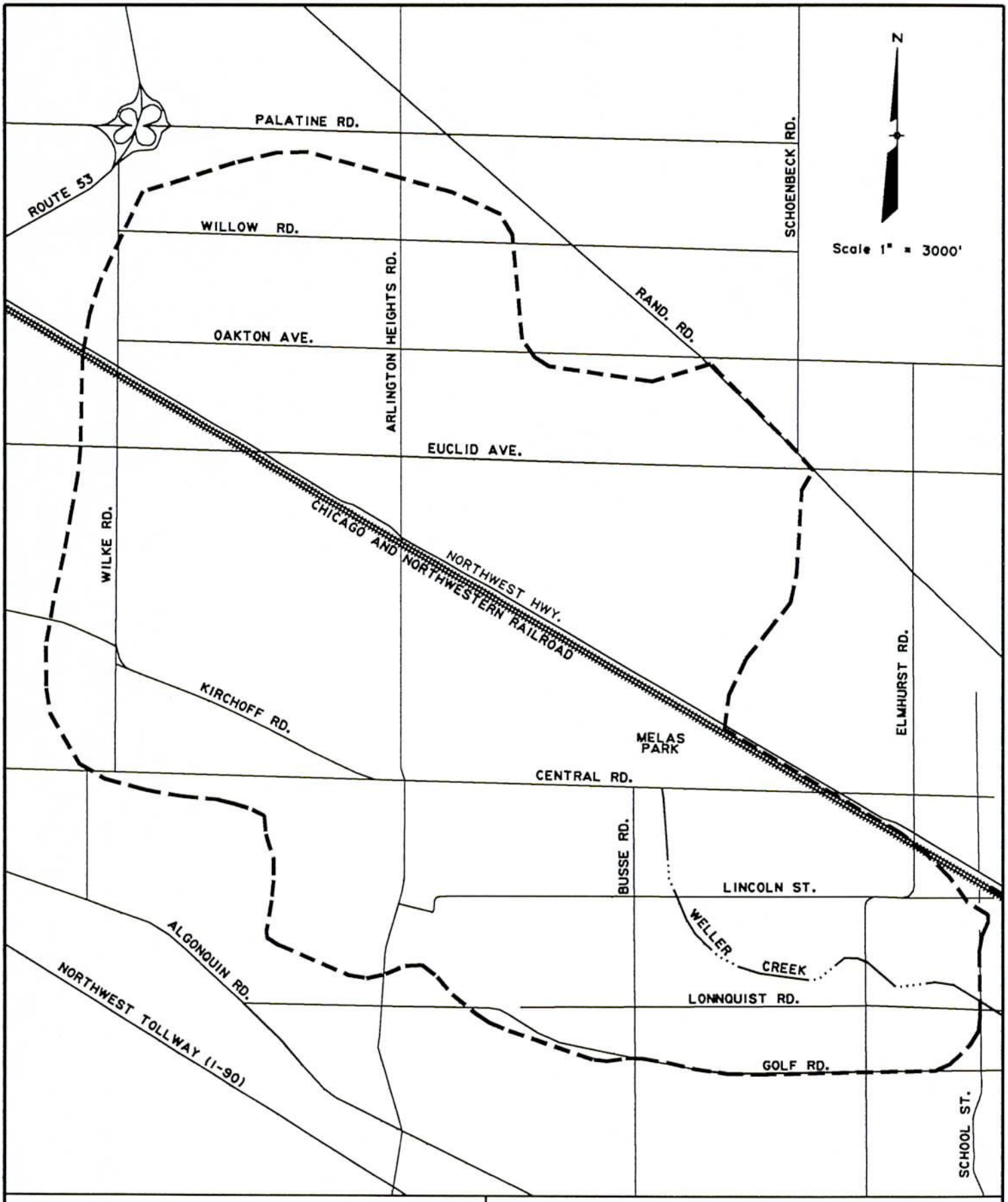
The public involvement program consisted of public meetings, a Village board presentation and coordination with the Weller Creek Ad-Hoc Committee. The public involvement program was implemented to inform area residents of streambank stabilization requirements and to assure that residents' concerns were addressed in the plan.

The size and expense of installing channel protection for the entire Weller Creek Streambank Stabilization project study area require the improvements to be constructed over a period of many years. Therefore, the recommended improvements have been prioritized, so the segments to be stabilized first are those with the most severe erosion.

This report is organized into five sections. First, a description is provided of the channel reaches of the study area; the drainage area characteristics of Weller Creek are also discussed. The second section presents the hydraulic analysis conducted for this study. Next, the erosion assessment for the Weller Creek channel is presented; this includes data collection and field observation followed by identification of specific problem areas. Following the assessment is the development of the recommended streambank stabilization plan. Key components of the overall plan development were public input and evaluation of alternative stabilization methods. Methods were selected primarily on their potential for long-term success and consistency with the existing character of the creek and surrounding neighborhood. With consideration for reach prioritization, an improvement plan was developed. The final section of the report presents the implementation strategy for the stabilization plan. The section provides construction and implementation costs, permit requirements, options to fund the improvements, and easement jurisdiction clarification. Exhibits, which are included at the end of this document, provide supporting information to the report.

STUDY AREA DESCRIPTION

The watershed draining to the project study area consists of the southeast portion of the Village of Arlington Heights and the northwest side of Mount Prospect; the 10.6 square mile area is illustrated in Figure 1. In the study area, the prominent land use is single family residential houses on lots less than 1/4 acre in size. Soils in the area are primarily Sawmill Silty Clay Loam (USDA, 1979).



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FIGURE 1
WATERSHED BOUNDRY TO STUDY AREA LIMITS
WELLER CREEK STREAMBANK STABILIZATION
VILLAGE OF MOUNT PROSPECT, ILLINOIS

Before residential development of this area, the channel was straightened, probably for agricultural purposes. Now, due to increased flow caused by urbanization, the unprotected channel is eroding the adjacent backyards and creating steep, 15-foot high banks.

The total length of the Weller Creek in the study area is approximately 11,000 linear feet (2.1 miles) which runs from the Arlington Heights sewer outfall at Central Road to the pedestrian bridge at School Street. School Street is an appropriate study area boundary because, just downstream of the pedestrian bridge, the banks were previously stabilized with monoslab paver blocks. For this project, the study area was divided into four reaches based on land use. Figure 2 illustrates the reaches which are listed below.

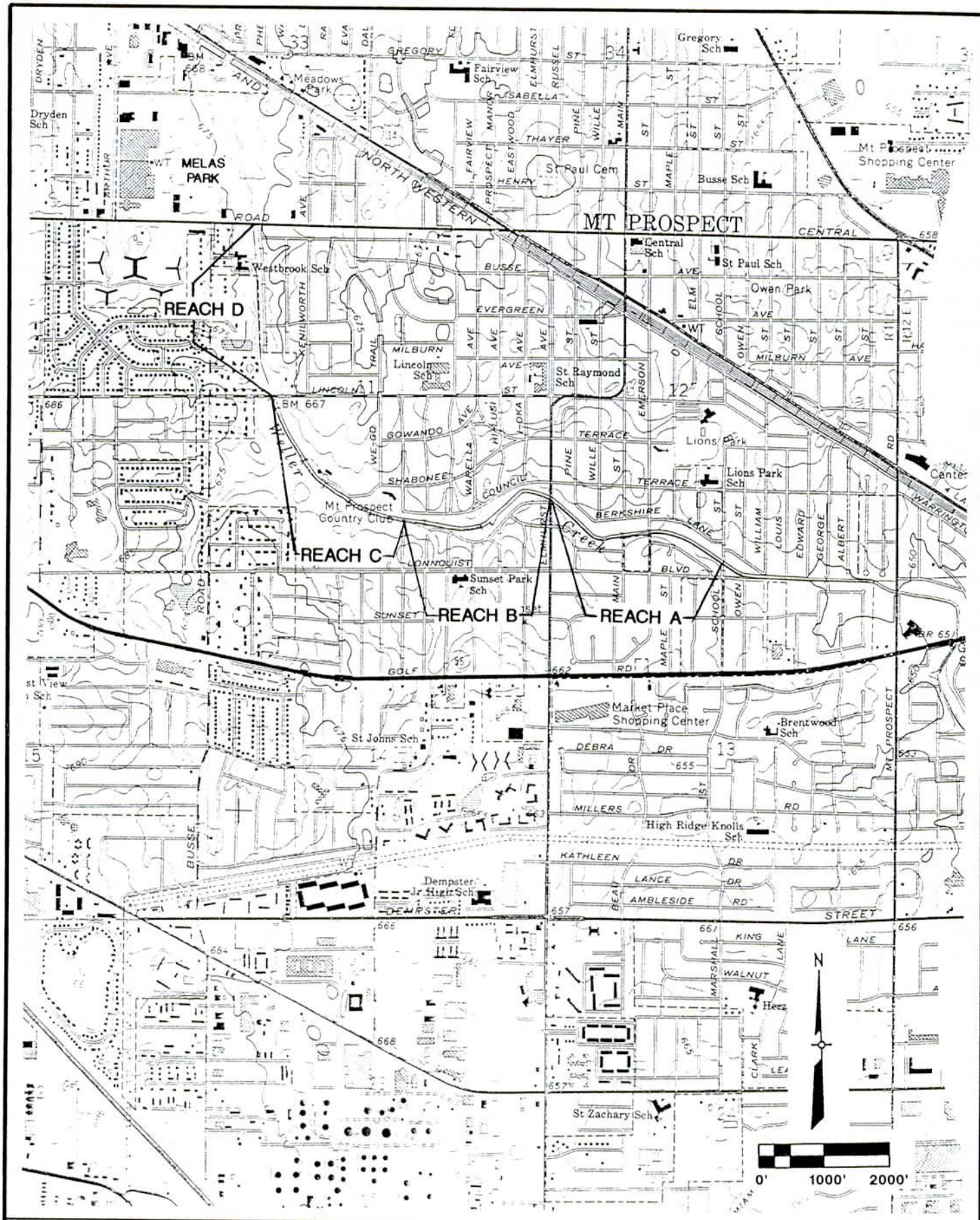
Reach A - Elmhurst Road (Illinois Route 83) to School Street
Reach B - See-Gwun Avenue to Elmhurst Road
Reach C - Lincoln Street to See-Gwun Avenue
Reach D - Central Road to Lincoln Street

Reach A runs 2,550 feet through a residential neighborhood comprised of single family homes. The back yards of all the homes along the creek extend to the channel bank, and the back property lines of some lots coincide with the original centerline of the creek. All lots adjacent to the creek in this reach have 10 to 30-foot wide utility easements parallel to the channel.

Lots on the south side of the creek that front on Hiawatha Trail extend to the platted centerline of Weller Creek. For the remainder of the properties along this reach, Weller Creek is platted to be within a drainage easement on a separate parcel adjacent to the residential lots. Due to erosion the actual centerline is not in the same location as the platted centerline.

Pedestrian bridges cross Reach A at School Street and at Main Street. Automobile traffic crosses the channel on bridges at Emerson Street and Elmhurst Road.

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FIGURE 2
REACH LOCATION MAP
WELLER CREEK STREAMBANK STABILIZATION
VILLAGE OF MOUNT PROSPECT, ILLINOIS

Reach B flows 2,700 feet through Mount Prospect Park District property, and there is a minimum of 100 feet of open space between the upper banks and the adjacent streets. The Village is pursuing eliminating several non-functioning combined sewer overflows (CSOs) along this section. Two pedestrian bridges are located along this reach, and the See-Gwun Avenue bridge separates Reaches B and C.

Reach C passes through the Mount Prospect Country Club golf course for 3,000 feet. In the past, the channel has been modified to accommodate revisions to the golf course layout. Several golf cart bridges cross the creek. Overall, maintenance by the golf course staff and the absence a dense shade canopy have prevented major erosion problems on this segment.

Reach D is the most upstream 2,650 feet of the study area. Along most of this reach, Weller Lane runs parallel to the east bank. The property to the east between the centerline of Weller Creek and the street right-of-way is owned by the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC). On the west side, beginning at Central Road, the Westbrook Elementary School property line meets the MWRDGC property line at the centerline of the creek. Further downstream new single family homes are being built among the older residences. Property lines along the western edge of this reach extend to the centerline of the platted creek, and the actual and platted centerlines are very similar.

The new developments are providing stormwater detention to prevent flow increases on Weller Creek. Other detention includes the Crumley detention basin on the west side and an unnamed detention basin at Lincoln Street, east of the channel.

A pedestrian bridge crosses Reach D to provide access to the elementary school. The roadway bridges at Central Road and Lincoln Street are at the upstream and downstream limits of this reach, respectively.

HYDRAULIC ANALYSIS

Introduction

The hydraulic analysis of Weller Creek included data collection, computer simulation, and investigation of the CSOs. Data was collected through survey in the field and from agencies that regulate waterways. A variety of flow conditions were simulated with a computer model which calculates water surface elevations and velocities. Several documents were reviewed and agencies contacted to determine ownership and operation procedures for the CSOs along Weller Creek and the impacts of sewer improvements in the area. Details of the hydraulic investigation is in Exhibit A.

Data Collection

Hydraulic analysis of Weller Creek required acquisition of the regulatory floodplain computer model from the Federal Emergency Management Agency (FEMA). To improve the accuracy of the analysis, ten cross sections of the Weller Creek channel were surveyed and added to the model. As part of the hydraulic analysis, Rust investigated the impact on Weller Creek of combined sewer system improvements in the Village of Arlington Heights. Several state and local agencies were contacted for information concerning these impacts; however, it appears a comprehensive analysis of the improvements was not performed by those agencies.

Hydraulic Model

Hydraulic analysis determines water levels and velocities for specified flows on the modeled waterway. This study employed the Water Surface Profile 2 (WSP-2) computer program created by the United States Department of Agriculture (USDA) Soil Conservation Service (USDA, 1976) to calculate these values. The input required for the program is surveyed cross section data and the flows at those cross sections.

The WSP-2 model for Weller Creek, obtained from FEMA, was developed to determine 100-year flood elevations. This model was created for floodplain/floodway mapping of Weller Creek (FEMA-FIRM, 1982) and the Mount Prospect Flood Insurance Study (FIS) (FEMA-FIS, 1982). For the streambank stabilization study, the hydraulic analysis was performed to determine critical erosive velocities along the channel and critical water surface elevations at bridge crossings.

To simulate existing conditions and improve the accuracy of the regulatory model, ten cross sections between School Street and Central Road were surveyed by Rust and added to the original model. Four of the ten cross sections were located upstream of Lincoln Street which serve to extend the model up to Central Road. The six other cross sections fell between School Street and Elmhurst Road. A comparison of 100-year water surface elevations from the FIS data with the revised model results showed a variation of -0.4 to 0.2 feet. These minimal differences sufficiently verified that the regulatory model simulated existing conditions accurately.

Working with the revised model, potential channel velocities were examined. Velocities along the study area reaches of Weller Creek range from 2.3 to 4.4 feet per second (fps) during a 100-year event when flows average 1800 cubic feet per second (cfs). The silty clay loam soil of the banks can tolerate velocities up to 3 fps, and the periodic seams of sand can tolerate velocities of 2.5 fps before erosion occurs (Fortier, 1926). Flows as low as 300 cfs cause erosive velocities on sections of Weller Creek.

Four roadway bridges and several pedestrian bridges cross Weller Creek within the study area. The floodplain extends beyond the banks of the creek into yards and homes and inundates bridges or their approaches making them impassible. To keep the bridges open during a 100-year storm, the bridges and approaches must be raised above the 100-year water surface elevation. The existing bridge roadway elevations and 100-year water surface elevations, as determined by the hydraulic analysis, are listed in Table 1.

TABLE 1

100-YEAR WATER SURFACE ELEVATIONS AT BRIDGES
Weller Creek
Village of Mount Prospect, Illinois

Location	Water Surface Elevations (feet NGVD) 100-Year	100-Year plus 400 cfs	Existing Bridge Elevation
School Street	654.9	655.3	653.5
Emerson Street	656.8	657.5	654.3
Main Street	657.2	657.9	654.5
Elmhurst Road	658.5	659.3	661.3
See-Gwun Avenue	661.6	662.1	661.1
Lincoln Street	664.6	665.4	667.4

Combined Sewer Overflows

A major concern is the CSO discharges into Weller Creek. In the older residential and commercial areas, the Village has one sewer system which combines stormwater with sanitary flows. To prevent sewage backup into basements during heavy rainfalls, the system is designed to overflow into Weller Creek when the sewers reach their full capacity. However, during heavy rainfalls, Weller Creek may also be at very high levels. Under these conditions, the CSOs are virtually inoperative because they are submerged below the water surface of the creek. It is the position of the Village that those CSOs be abandoned.

MWRDGC and the Village of Arlington Heights each own one CSO at Central Road. Being at the upstream end of Weller Creek, these structures are not subjected to high water levels and submergence as often as the CSOs further downstream. Although Mount Prospect would prefer these structures be abandoned to prevent all sanitary discharges into Weller Creek, there is no intention by the owners to eliminate the CSOs at Central Road.

Arlington Heights and TARP/CUP Improvements

Arlington Heights is constructing an interceptor sewer to increase sewer capacity and relieve basement and street flooding caused by the existing combined sewer system while the MWRDGC is constructing a deep tunnel system for the Tunnel and Reservoir Plan (TARP). Part of the Arlington Heights improvements include an additional dropshaft to TARP. Part of TARP outlets into the O'Hare Chicago Underflow Plan (CUP) Reservoir currently under construction.

The increase in capacity of the Arlington Heights combined sewer system may increase the overflows into Weller Creek by as much as 400 cfs; this is the maximum capacity of the Arlington Heights CSO under surcharged conditions in TARP. An increase of 400 cfs on Weller Creek raises 100-year water surface elevations up to 1.2 feet.

TARP reduces the frequency of combined sewer overflows throughout the district. The MWRDGC TARP system will fill to capacity only during extremely large storms when Weller Creek may also be at very high levels.

A detailed hydrologic/hydraulic analysis would be required to determine when peak flows occur on Weller Creek, in TARP and in the Arlington Heights combined sewer system. If the flows in the three systems reach peak levels simultaneously, flow in Weller Creek would increase. If the peaks are spaced far enough apart, flow in Weller Creek could be less than in the past.

Concurrent with the Arlington Heights project, the MWRDGC is constructing the 1,050 acre-foot O'Hare CUP Reservoir which will greatly enhance the storage capacity of the TARP system and reduce the frequency of CSO operation. Preliminary estimates predict the reservoir would eliminate combined sewer overflows in storm events up to the 28-year frequency event. In larger events, the flow of Weller Creek may increase due to the additional flow of the Arlington Heights combined sewer system reaching the CSO at Central Road.

If the improvements cause damages in Mount Prospect, the Village may seek a judgement against Arlington Heights as a violation of Drainage Law. First, Mount Prospect would be required to prove, through hydraulic analysis, that the Arlington Heights improvements increase damages by increasing water surface elevations. According to Drainage Law, Arlington Heights has the right to discharge a reasonable amount of flow into Weller Creek; only a court can determine what is reasonable.

Predicted Water Surface Elevations

Table 1 reflects the results of the hydraulic analysis based on two flow conditions. The 100-year condition simulates the 100-year storm. The second condition is the 100-year storm plus 400 cfs, the maximum increase of discharge contributed from the Arlington Heights CSO.

EROSION ASSESSMENT

Data Collection

The Weller Creek Streambank Stabilization erosion assessment required aerial, topographic, and sewer system maps, and plats of survey. Aerial photograph maps, produced in 1990, were used to record the locations of channel details during field inspection of the channel. The topography of the project study area was evaluated on the Arlington Heights, 1980, USGS 7.5 minute quadrangle map which is at a scale of 1 inch equals 2,000 feet. Sewer atlases, furnished by the Village, MWRDGC and Illinois Department of Transportation (IDOT) provided locations of CSO and storm sewer outlets. The plats of survey, collected by the Weller Creek Ad-Hoc Committee, provided the legal dimensions of each property and easement.

Rust and Village staff performed a field investigation by wading through Weller Creek from Central Road to Lincoln Street and then from School Street to See-Gwun Avenue; observations of the reach through the golf course were made from the banks. Erosion locations, problem areas, and other channel conditions were recorded on video tapes and documented in field notes during the field

investigation. The video tapes are available at the Mount Prospect Public Library and Department of Public Works.

Problem Identification

Increased stormwater discharges due to urbanization are the primary cause of erosion to the banks of Weller Creek. As agricultural fields develop into commercial and residential neighborhoods the amount of open, pervious land surface decreases. This reduction in pervious area prevents stormwater from infiltrating into the soil and slowly recharging the water table, evaporating, or being absorbed by vegetation. Instead, the stormwater is quickly collected into storm sewers which eventually outlet into open channels such as Weller Creek. Large quantities of runoff accumulate in these open channels in a very short time; the result is unnaturally high velocities and water surface elevations. The elevated velocities are sufficient to erode the banks of the channel.

The lack of deep-rooted vegetation along the channel contributes to the rate of erosion. Like most urban streams, the majority of Weller Creek lies in the shade of tall trees. Under the shade canopy, very little vegetation is able to survive. To prevent erosion, grasses and brush with dense and deep root systems are necessary to bind the soil in place and help the banks withstand the forces of urban runoff.

Spot locations of sandy soils throughout the study area also present a problem. While surrounding slopes are primarily eroding at the toe, the sandy soil is very susceptible to erosion and tends to fail from the toe of the slope to the top of the slope. Bank heights in the study area average approximately ten feet; large gouges occur when the sandy soil erodes along such high banks.

The present erosion conditions on Weller Creek range from mild to severe. Severe erosion locations deserve the highest priority because the integrity of nearby structures is threatened. The progress of moderate erosion may be stopped by the removal of channel obstructions or toe stabilization, and minor erosion due to overland flow or sloughing requires minimal effort to repair.

Reach A has the severest erosion on the south bank from Emerson Street to one lot past Main Street. The structures on these three lots are significantly closer to the creek than the surrounding lots. Main Street dead ends at this location with the pavement ending at the top of the slope. Surface runoff from the pavement and associated storm sewers add to the erosion problem. In addition, foundations for the pedestrian bridge at Main Street are undermined.

Other locations along Reach A exhibit moderate erosion caused by homeowners' attempts to alleviate their erosion problems. Methods range from dumped bricks and broken concrete, to more elaborate timber, metal and fencing combinations. Even when the erosion is stopped at an individual location, the erosion problem, in many cases, is transferred to the unprotected opposing bank or to a downstream location. At one location on this reach, a retaining wall and fill material appears to have been installed to the platted centerline of the creek. The creek, in response to this structure, is eroding the opposing slope and moving out of the drainage easement area.

Reach B has moderate erosion similar to parts of Reach A. The toe of the bank is eroding and the dense shade canopy is inhibiting the growth of stabilizing vegetation. Utility lines and pedestrian bridges will be damaged if the erosion progresses. Flows from storm sewer outfalls and CSOs also impact erosion on this reach.

Reach C and its shade canopy have been controlled by the park district. Although the open area allows sunlight to the banks of the creek, the roots of golf course grass are too short to stabilize the banks of the creek. Due to the lack of stabilizing vegetation, the toe of the bank is eroding.

Reach D exhibits much less severe erosion. The majority of the problem within this reach is at the toe of the slope where the normal water line meets the slope. This problem is constant throughout the entire reach.

Larger areas of erosion on Reach D are evident at sewer outfalls and on the opposing bank. Streambank heights within this reach are as high as fifteen feet. Some pipe inverts are five to seven feet above the normal water elevation resulting in highly eroded areas from the energy created by water dropping from that height.

PLAN DEVELOPMENT

Public Involvement

The Weller Creek Ad-Hoc Committee was formed as a means of assuring the citizens' concerns would be addressed in the streambank stabilization program. Throughout the project, this committee, consisting of local property owners and residents, provided valuable information and assistance. To accurately establish property lines and easements on the conceptual design plans, the Weller Creek Ad-Hoc Committee members collected plats of survey for the properties along Weller Creek. Also, the committee and staff participated in a field trip to Weller Creek to see, first hand, representative erosion locations and to streambank stabilization projects in other communities where bioengineering methods are succeeding. Several meetings were attended by Rust, the Mount Prospect staff, Village trustee Michaele Skowron, and the Weller Creek Ad-Hoc Committee to discuss the conceptual plans for streambank stabilization. These meetings were an opportunity for Rust to explain the proposed methods of treatment and the reason for their selection. The residents were asked to express their comments which were subsequently incorporated into the plans. Minutes from those meetings are in Exhibit B.

A presentation to a Mount Prospect Village Board Committee of the Whole was made on December 12, 1995. Mount Prospect staff introduced the project and provided the background information. Rust presented an overview of the erosion problem with a video of their field reconnaissance, conceptual streambank stabilization plans, and samples of specific solutions. Exhibit C contains the graphics provided by Rust; Figure C-1 illustrates the existing conditions along Reaches A and D, Figure C-2 compares existing and proposed conditions at specific locations; and Figure C-3 defines

the ownership and easement limits. The Weller Creek Ad-Hoc Committee chairperson read a letter relating the opinions of the residents along Weller Creek which is also included in Exhibit C.

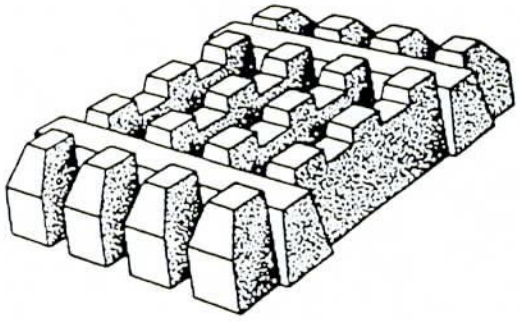
Alternatives

A number of alternatives is available for stabilization of the streambanks. The streambank stabilization treatment previously installed downstream of School Street utilized a typical engineered solution. Monoslab paver blocks were installed on the bottom and both sides of the creek. These precast concrete pads have void spaces that are filled with topsoil and seeded. A typical monoslab cross section is shown in Figure 3. The result is a uniform and geometric appearance, with easy access and maintenance, as vehicles can drive on the bottom.

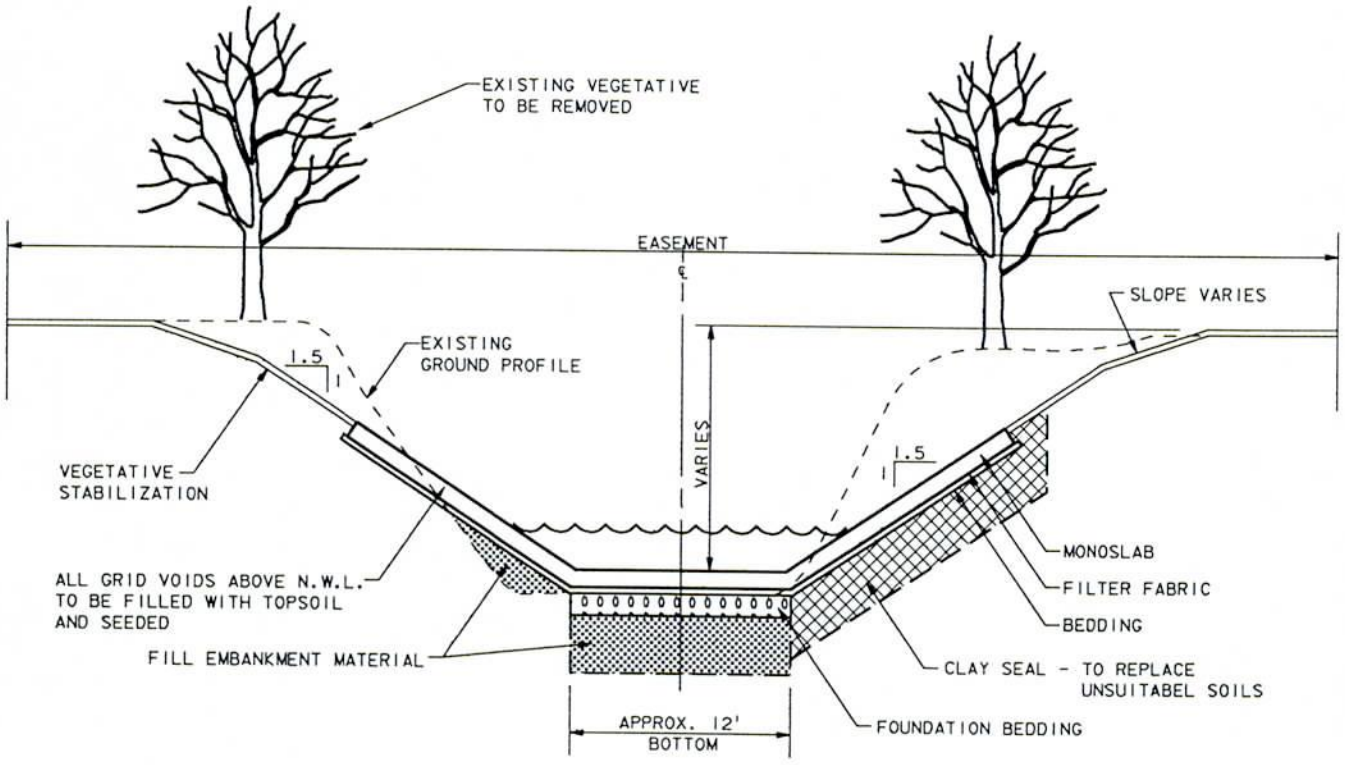
Installation of treatment like paver blocks involves creating a regular cross section along the platted centerline of the drainage easement. The current configuration of Weller Creek may not be within this easement at all locations, which may result in a loss or gain of yard area for certain homeowners. Grading for this typical cross section would also require removal of the majority of trees within the easement area. Another grading concern is the possible special waste classification of the excavated soil from the creek. Higher costs are incurred for the proper handling and disposal of this material.

The benefit of this treatment is a high degree of permanence, low maintenance and ease of maintenance provided by the vehicular access. The monoslab paver blocks have a minimum life span of 25 years. Minimal tree maintenance is required because most trees will be removed, and new trees will not grow. Costs for any maintenance is greatly reduced by improved access. Side slopes can be tractor mowed which increases efficiency.

Due to site specific problems, such as utility locations and protection of existing bridge abutments and power poles, some locations may require special engineered treatments. Specific solutions may include retaining walls, sheet piling, gabions or headwall structures which are described next.



MONOSLAB PAVER BLOCK



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FIGURE 3
TYPICAL MONOSLAB CROSS SECTION
WELLER CREEK STREAMBANK STABILIZATION
VILLAGE OF MOUNT PROSPECT, ILLINOIS

Retaining Wall - To stabilize a bank, a wall is constructed. Material for this structure varies from concrete to steel to brick to plastic. A variety of methods is available to anchor the wall in place and depend on the material used.

Sheet Piling - This specific type of retaining wall consists of rigid plates usually made of steel. The plates are driven vertically into the soil. In series, these interlocking plates create a wall that retains the soil and stabilize the bank.

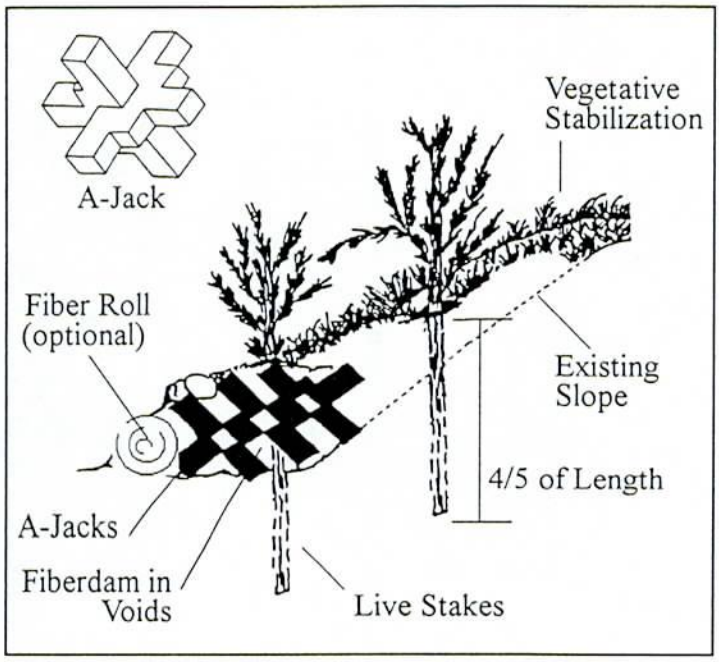
Gabions - Wire baskets filled with rock are arranged along the slope or in steps beginning below the toe of the channel. Baskets vary in size and shape and are laced together. Vegetation may be integrated between the rocks to create a natural appearance.

Headwall - Associated with sewer outlets, a headwall stabilizes the surrounding soil and is sized specifically for the sewer size, soil conditions, and slope. The wall is made of reinforced, cast-in-place concrete. Cylindrical concrete piles are usually driven below the headwall for support.

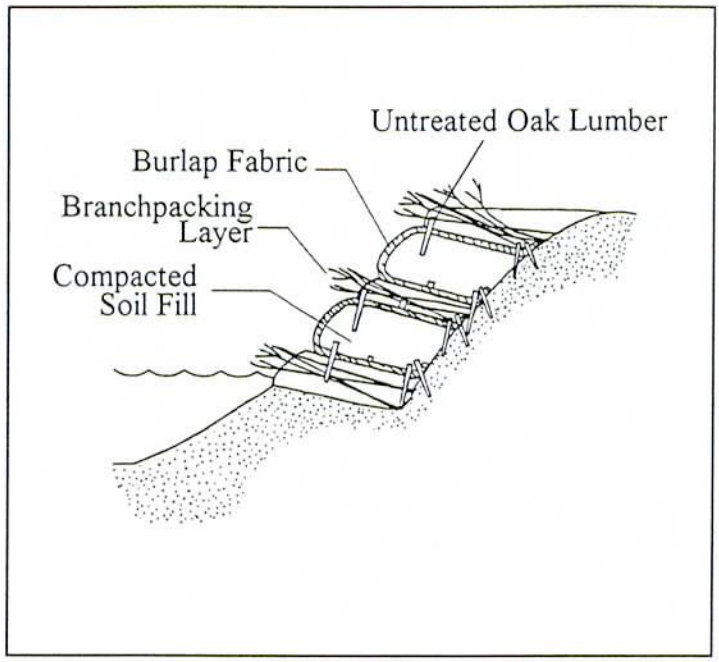
Bioengineering is a combination of plant materials and engineered structures and materials to provide a system for streambank stabilization. The plant material component of this system provides a root system that binds the engineered materials together and to the soil. Since this is a living and growing component, it strengthens over time and is able to rebuild itself if damage occurs. Adequate sunlight must be provided if plant materials are expected to establish and flourish within an area.

The engineered structures and materials component of these techniques provide several benefits. They provide immediate stabilization and temporary protection until plants and seeding can be established. If the plant material should fail, these structures allow adequate temporary protection.

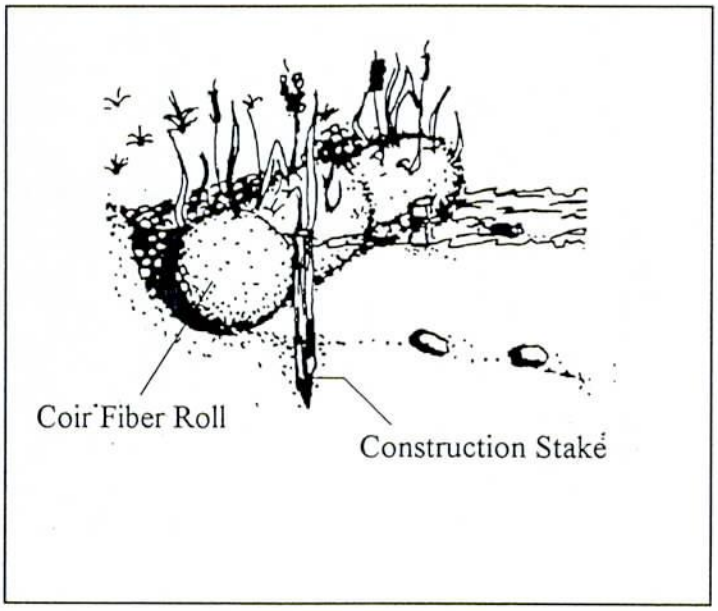
Several bioengineering techniques are described in the following paragraphs and illustrated in Figure 4. Recommended plant species for streambank stabilization are listed in Table 2.



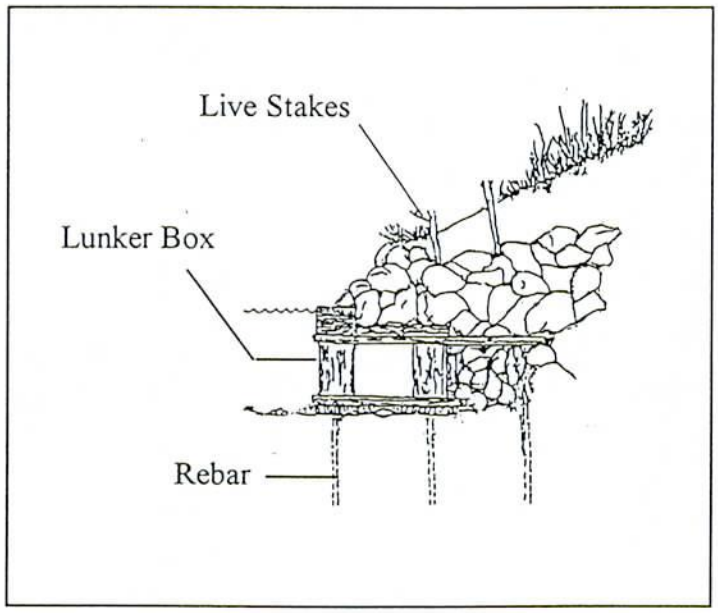
A-JACKS



VEGETATED GEOGRID



COIR FIBER ROLL



LUNKER

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FIGURE 4
STREAMBANK STABILIZATION METHODS
WELLER CREEK STREAMBANK STABILIZATION
VILLAGE OF MOUNT PROSPECT, ILLINOIS

TABLE 2

PLANT SPECIES LIST
Weller Creek
Village of Mount Prospect, Illinois

	Common Name	Botanic Name
Toe, Lower Banks (stabilizing species)		
	Sweet Flag	Acorus calamus
	Water Plaintain	Alisma subcordatum
	Bluejoint Grass	Calamagrostis canadensis
	Creeping Spike Rush	Eleocharis acicularis
	Blue Flag Iris	Iris virginica
	Torrey's Rush	Juncus torreyi
	Switch Grass	Panicum virgatum
	Arrowhead	Sagittaria latifolia
	Hardstem Bulrush	Scirpus acutus
	Chairmaker's Rush	Scirpus americanus
	Dark Green Rush	Scirpus atrovirens
	River Bulrush	Scirpus fluviatilis
	Prairie Cord Grass	Spartina pectinata
	Blue Vervain	Verbena hastata
Banks and Slopes (stabilizing matrix species)		
	Big Bluestem	Andropogon gerardii
	Brown Fox Sedge	Carex vulpinoidea
	Canada Wild Rye	Elymus canadensis
	Streambank Rye	Elymus riparius
	Silky Wild Rye	Elymus villosus
	Virginia Wild Rye	Elymus virginicus
	Torrey's Rush	Juncus torreyi
	Switch Grass	Panicum virgatum
	Indian Grass	Sorghastrum nutans
	Prairie Cord Grass	Spartina pectinata

TABLE 2

(continued)

PLANT SPECIES LIST
Weller Creek
Village of Mount Prospect, Illinois

Common Name	Botanic Name
Cover Crops (hydroseeding, hand or machine planted species)	
Sweet Flag	Acorus calamus
Annual Ryegrass	Lolium multiflorum
Perennial Ryegrass	Lolium perenne
Smartweed	Polygonum punctatum
Brush Cuttings for Use with A-Jacks and Vegetated Geogrid or as Live Stakes	
Buttonbush	Cephalanthus occidentalis
Silky Dogwood	Cornus amonum
Red-Osier Dogwood	Cornus stolonifera
Peach-Leaved Willow	Salix amygdaloides
Pussy Willow	Salix discolor
Sandbar Willow	Salix interior
Elderberry	Sambucus canadensis

A-Jacks and Lunkers - Interlocking concrete structures shaped in the form of jacks (like the children's toy) or rectangular palette-like structures made from wood or recycled plastics are trenched in at the toe of a streambank for protection against toe erosion. Backfill is placed on top of these structures, and the slope is regraded and planted with woody vegetation, cover crop and live stakes to stabilize the bank. Lunkers are used for supplementing fish habitat and are ideal where the fisheries resource is a concern.

Vegetated Geogrid, Live Cribwall, and Branch Packing - Each of these methods is used independently to rebuild a streambank after a slope failure. The rugged construction lends itself to use in high velocity areas. Layering of soil and live brush between geotextile fabric, cribwalls, or brush layers is used to rebuild a bank. Dead construction stakes and live stakes are driven vertically to provide stability and revegetate the bank.

Permanent Erosion Control Blankets and Fabrics - Mats of jute mesh are fastened down over the eroded streambank. The fabric rebuilds the bank by capturing sediment while vegetation can still grow through.

Coir Fiber Roll - A roll of tightly knit coconut fibers or similar material is set at the toe of bank to protect against further toe erosion and eventual undermining of the entire streambank. The fiber roll is held tightly against the bank with construction stakes. Live stakes are sometimes driven through the roll to establish vegetation. Over time, sediment is trapped from the stream flow to further rebuild the bank behind the roll.

Vegetative Control - Invasive nuisance vegetation is removed and adequate sunlight and appropriate riparian vegetation is reintroduced. A common reason for streambank erosion, especially in urban areas, is invasion of stream corridors with trees and vegetation that shade the banks and provide inadequate bank stabilization through shallow roots. Restoration of approximately 50 percent of the ambient sunlight to the banks along with reintroduction of woody shrubs and grasses with deeper, more extensive root system provides significant streambank protection. Some level of vegetative control is required for all of the above techniques, but, in some instances, vegetative control alone may provide sufficient stabilization.

Bioengineering provides a more natural appearance than traditional engineered solutions. These techniques work within the existing configuration of the creek with less disturbance to upslope areas. Traditional bioengineering treats only the erosional side of flow, and not the opposing or depositional side. Due to the highly urbanized flow and channelization of the study area, both sides of the creek would require treatment with the appropriate bioengineering practice.

Prioritization

A priority ranking was determined for the four reaches of the Weller Creek Streambank Stabilization project. The erosion along Reach A, from School Street to Elmhurst Road, affects the greatest number of properties and is the most severe, so Reach A was designated the highest priority. Reach D, from Lincoln Street to Central Road, is the second most populated area and has only moderate erosion; therefore, it was designated the second priority for streambank stabilization. Reach B, from Elmhurst Road to See-Gwun Avenue, is within park district property. Although erosion is present, private property is not directly threatened, so this segment was given third priority. In Reach C, from See-Gwun Avenue to Lincoln Street, severe erosion has been prevented through maintenance of the streambanks by the golf course staff; thus, when the three other reaches are complete, Reach C will be considered for streambank stabilization.

On Reach A the erosion between Emerson Street and the Main Street area is the highest priority. Erosion has undermined the foundation for the Main Street pedestrian bridge and is threatening other structures along the top of the south bank of Weller Creek. The roadway of the Emerson Street bridge should be raised above the 100-year water surface elevation to keep the route open during high flows. Even though starting bottom stabilization at School Street and progressing toward Elmhurst Road would improve access conditions, the most severe erosion locations within Reach A should be addressed first to prevent structural damages.

The second segment recommended for stabilization is between School Street and Emerson Street. Completing this portion will connect the existing monoslab stabilization downstream of School Street with the highest priority segment.

The section upstream of the Main Street area is the lowest priority on Reach A. Some streambank stabilization may be tied into the Elmhurst Road bridge replacement project by IDOT.

Recommended Streambank Stabilization Plan

Based on the agenda for the Committee of the Whole dated April 11, 1995, any bank improvements should be based on the following:

1. A high degree of permanence
2. Ease of future maintenance
3. Low maintenance
4. Access for future maintenance

In additon to these criteria, a cost effective solution was pursued. The first alternative presented, monoslab paver blocks from School Street to Central Road, would cost between $10 million and $13 million. The recommended solution is bioengineering with some monoslab paver blocks and structural components at an implementation cost of $4.4 million.

Except for the severe erosion locations, bioengineering techniques are recommended to continuously protect both sides of the channel. Bioengineering erosion control relies on the binding ability of specific plant root systems to stabilize soil. The vegetation continuously replaces and repairs itself for permanence and low maintenance. Selective tree removal is also recommended to improve accessability to Weller Creek and sunlight penetration necessary for the new vegetation. Existing structures, such as sump pump drains and storm sewer outlets, will be accommodated in the design of the stabilization project. The recommended solutions are presented in order of reach prioritization.

Reach A is different than the other reaches in that homes are immediately adjacent to both banks for the entire reach. Access to the channel is limited to the Elmhurst Road bridge, a Village owned lot at 208 West Hiawatha Trail, rights-of-way at Main and Emerson streets, as well as creek access from the existing monoslab paver blocks and ramp near School Street.

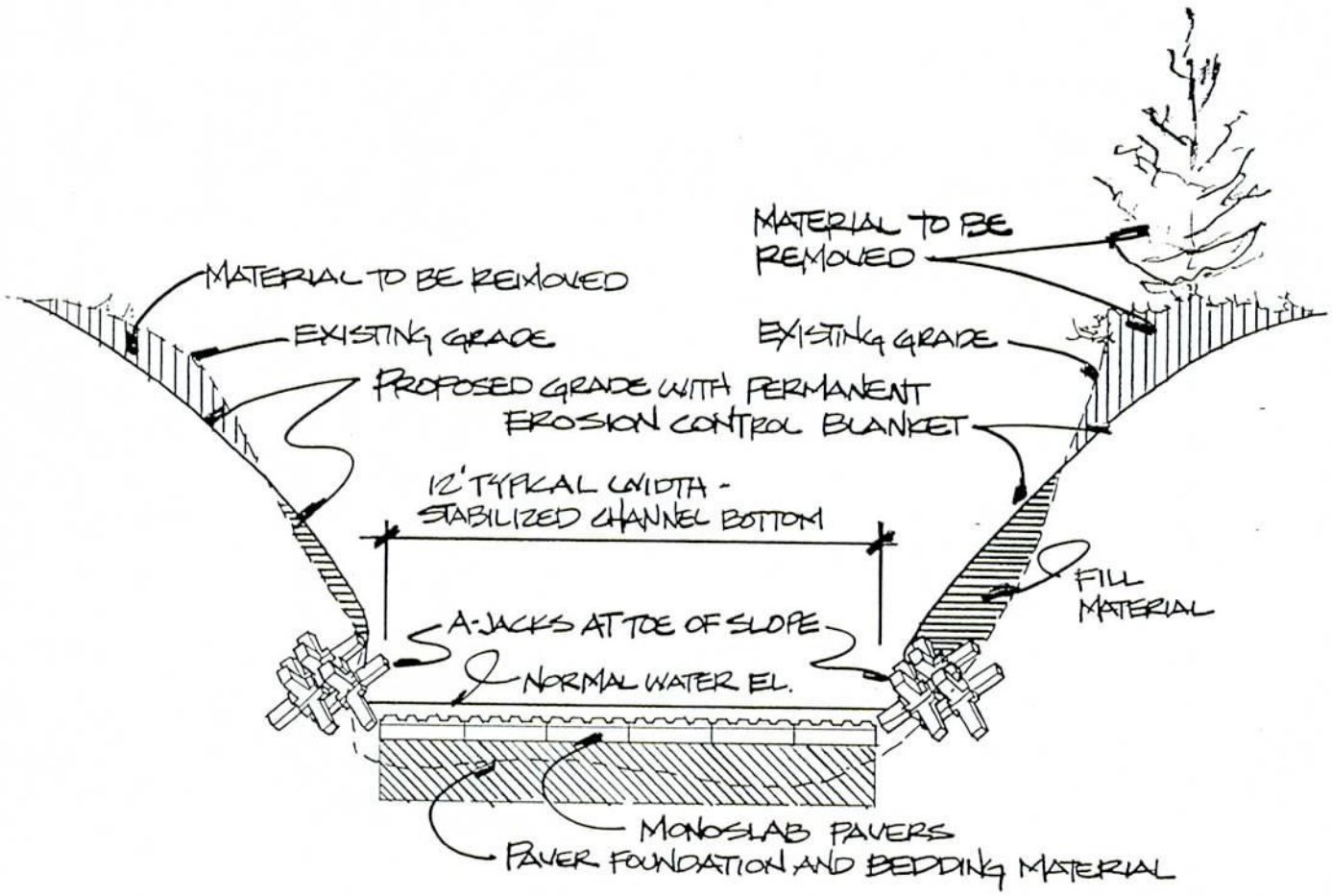
The recommended streambank stabilization plan for Reach A is a combination of a monoslab creek bottom for the entire length of the reach and bioengineering techniques used at the toe and upslope areas of both banks. A typical cross section appears in Figure 5. In the severely eroded areas structural solutions are recommended.

The monoslab bottom would extend from the existing installation at School Street to the Elmhurst Road bridge. This hard bottom will prevent down-cutting of the creek and remove several existing deep pools, providing a uniform depth of water. Additional ramped access, similar to School Street, is proposed from the Village owned lot at 208 West Hiawatha and from the Main Street right-of-way, north of the creek. This would provide vehicle access to all areas within this reach, including the area between the School Street and Emerson Street bridges, and aid in future maintenance of this area. All improvements near the Elmhurst Road bridge must be coordinated with IDOT bridge redesign.

The toe of the streambanks on Reach A would be stabilized utilizing a combination of bioengineering techniques. Typically, lunkers or A-jacks are recommended because of their durability and permanence.

Upslope areas of the streambanks will be treated with a permanent erosion control fabric combined with seed, plugs and dormant or rooted cuttings. Using these techniques will minimize grading of the upper slope areas to retain as much of the existing root mass as possible.

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Rust Environment & Infrastructure

FIGURE 5
TYPICAL MONOSLAB/BIOENGINEERING CROSS SECTION
WELLER CREEK STREAMBANK STABILIZATION
VILLAGE OF MOUNT PROSPECT, ILLINOIS

For any of the bioengineering techniques to establish and flourish, more sunlight must be provided to these areas. Selective tree pruning and removal is discussed later in this report.

One portion of Reach A requires a special engineering solution. The area includes the two lots between Main Street and Emerson Street and one lot on the west side of Main Street, all on the south side of the creek. These three lots have side yards oriented toward the creek, and, because of the minimal yard area available, the erosion is highly visible and near the fences, walks, decks and driveways of these homes. At this location a more structural solution such as sheet piling or retaining walls is appropriate. These solutions are also appropriate at the end of Main Street to hold the pavement in place and to incorporate drop structures to handle runoff from the street and discharge it at stream level, therby reducing the energy of the runoff.

Replacement of the existing Main Street pedestrian bridge and Emerson Street bridge is also desired. The sheet piling or retaining wall solution to the erosion can act as a footing or base for placement of a new pedestrian bridge. The Emerson Street bridge should be reconstructed above the 100-year water surface elevation (656.8 feet National Geodetic Vertical Datum) to keep it passable during large storms.

Reach D exhibits moderate erosion. The bioengineering treatments recommended for this reach are A-jacks, lunkers or coir fiber rolls into the existing void created at the normal water line. Live plant plugs and dormant or rooted cuttings are incorporated into these techniques. Any localized erosion areas immediately upslope of this treatment would be covered with a permanent erosion control blanket and planted or seeded.

Reach D has sewer outfalls which create large areas of local erosion. Drop structures are recommended for each of these locations to discharge stormwater at or near the normal water elevation. Protection should be provided on the bank opposing these structures. Backfilling of areas excavated for drop structures should be accomplished utilizing vegetated geogrids.

As with Reach A, Reach D also requires selective removal and thinning of the existing tree canopy. The shade problem in this area is even worse because of higher bank elevations. Access can be accomplished from Weller Lane, so a hard surface bottom is not needed.

Reach B is experiencing moderate erosion. The recommended solution for this problem is to protect the toe of the bank with A-jacks or lunkers. Selective tree pruning and removal is also recommended to provide the sunlight required for the bioengineering techniques to establish and flourish. Access is unlimited through the park district property, so monoslab paver blocks on the bottom of the channel is not necessary.

Reach C, through the golf course, does not have a dense shade canopy like the other reaches. The recommendation is to stabilize the toe of the bank with fiber roll and vegetative stabilization. Any bridge repairs should be done by the golf course staff. Throughout this reach, the channel is accessible.

Recommended Selective Tree Pruning and Removal

Trees growing along Weller Creek completely shade the banks and suppress the growth of ground vegetation. The lack of ground vegetation is a primary cause of erosion on Weller Creek. A strong population of native prairie grasses and selected woody shrubs with deep root systems capable of holding soil in place is essential to maintaining a stable creek channel. Rust recommends selective removal and pruning of trees along Reaches A, B, and D to provide adequate sunlight to establish the vegetation necessary for a successful stabilization project. Periodic maintenance must be performed to preserve the level of sunlight that will encourage the plantings to thrive.

All undercut trees would be selected for removal first. The soil around the roots of many large trees on the banks of Weller Creek continues to erode during high flows in the channel. This exposure causes the tree to lose its anchor to the ground, and the tree can be easily blown over. Fallen trees left in the creek can promote erosion by diverting and directing flows against the bank. When a tree

does fall, damage is likely to occur to nearby homes and utility lines. The failure also disturbs the bank by loosening the soil and leads to further erosion. The roots of the undercut trees should be left intact, so a gouge is not made in the bank. To prevent regrowth, the stumps should be treated with herbicides which are safe for the environment. Although the removal of all undercut trees may eliminate all the trees along the bank on some properties, removal of the trees with exposed roots is necessary to eliminate the threat to private property and the banks and to reduce the density of the shade canopy.

If the removal of undercut trees does not restore adequate sunlight to the banks, the undesirable species will also be selected for pruning or removal. Non-native species, such as Buckthorn, Tree of Heaven, White Poplar, and Box Elder, thrive while crowding out desirable native trees. Low quality native tree species, such as Cottonwood and Weeping Willow, shed branches and leaf debris that clog the channel and cause erosion. Strong native trees could be encouraged to grow along the north side of Weller Creek, where their shadows would not fall on the banks and inhibit the growth of ground vegetation.

The canopy should be selectively trimmed and trees removed until adequate sunlight is evenly distributed across the area. Adequate sunlight is considered to be 50 percent or less shade canopy or half a day of full sun. One methos to measure the shade canopy density is performed by establishing points every 5 feet across the bank and at least 10 feet beyond the top of bank. If sunlight is obstructed by trees or shrubs over more than half of the points, the sunlight penetration is inadequate.

During the Weller Creek Ad-Hoc Committee meetings, various advantages of preserving the trees along the banks of Weller Creek were discussed. The dense growth of trees provides a visual and noise screen for properties adjacent to the channel. The trees are also a safety barrier; the thick brush prevents children from climbing or falling down the steep banks. The stands of trees serve as wildlife habitat, and their beauty attracted homeowners to the area. Residents feel these factors

influence the property values of their homes.

Although the practical and aesthetic value of the trees along the banks of Weller Creek is valid, the damage and property loss caused by erosion negatively impacts property value. According to residents, the trees along Weller Creek easily fall over during storms; this results in costly damage to houses and utility lines. Rust's recommendation for the selective removal of trees will avoid the cost and damage in the future. In severe erosion areas, several feet of a backyard may be lost to erosion in one year. The streambank stabilization project will prevent the loss of land and protect the investment of homeowners. Also, the overall approach of planting native vegetation and shrubs can be aesthetically pleasing especially when mixed with a variety of wild flowers; short ornamental shrubs may be allowed at the top of the banks as long as they do not block sunlight from reaching the stabilizing vegetation.

The success of bioengineering techniques for streambank stabilization relies on the growth of specific vegetation. These native prairie grasses and woody shrubs require direct sunlight which is not possible with the tall trees along Weller Creek. Rust recommends the selective removal of the existing trees to prevent further erosion and create the conditions required to vegetatively stabilize the banks.

Recommended Plantings Based on Slope Orientation

Establishment of deep-rooted plant materials is the desired result of bioengineering solutions for streambank stabilization. Vegetation along the lower bank and toe of the slope are selected for their ability to become established and thrive in conditions that include saturated soils, varied soil types, occasional flood inundation and varying degrees of sunlight. The success of the stabilization is determined by how well these areas become established.

Plantings for the upper slope and toe of bank areas must be carefully chosen and placed so as to not impair the establishment of vegetation on the lower bank and toe areas. Although trees and shrubs

are not entirely discouraged from being planted, the quantity and placement of this material must be carefully considered.

In areas, such as Reaches A and B, where the creek orientation is primarily east-west, vegetation along the north facing slope determines the availability of sunlight to both banks. Because of the steepness of the slopes along Weller Creek, almost any plant along the south bank will cause shading for a portion of the day. For the same reason that heavier thinning is required, continuous plantings and hedges must be discouraged on the south slope. Plantings adjacent to the north bank do not greatly impact the establishment of vegetation on the either slope, although large trees should not extend over the bank and cast shadows.

In Reaches C and D, where the orientation of the creek is north-south, a uniform treatment of required for both banks. Thinning and removal of existing vegetation is required on both banks to allow adequate sunlight.

IMPLEMENTATION AND FUNDING

Introduction

In addition to preparing the conceptual plans, the success of the Weller Creek Streambank Stabilization project requires estimating the implementation and maintenance costs, determining funding sources, investigating the permit requirements, and establishing easement and property ownership.

Cost Estimating Method

The estimated implementation costs for components of the Weller Creek Streambank Stabilization project were determined as part of the investigation process. These estimates are for long term budgetary planning and are approximate planning level cost estimates based on the best information

currently available. Additional specific site and material data are required to develop a detailed engineering estimate. During preliminary design, the appropriate surveys and geotechnical investigations must be conducted in order to substantiate the cost estimates.

The planning estimates presented in this report were developed by estimating quantities of key cost items. Unit costs were obtained from several sources including recent bid tabulations for similar projects, Rust construction experience in Cook County, and Means Site Work and Landscape Cost Data, 14th Edition, (Means, 1995). The individual unit costs include materials, equipment, labor, and contractor overhead and profit where applicable.

The implementation cost to the Village includes the cost of the project mobilization, engineering, legal costs, and program administration, as well as the actual cost of constructing improvements. The contractor's cost for mobilization and demobilization of the project was assumed to be 4 percent of the cost of improvements alone. The cost of engineering, legal service (notices, documents, etc.) and project administration was assumed to be 10 percent of the construction cost. A contingency of 15 percent of the construction costs was included to cover unforeseeable costs such as major utility relocation, difficult subsurface conditions or unusual increases in material or labor rates. The total estimated implementation cost to the Village is the sum of the construction costs plus mobilization, engineering, legal, administration, and contingency costs.

Costs by Reach

Conceptual design plans were developed for Reaches A and D, thus itemized costs were prepared for only those two reaches. The implementation costs for Reaches B and C are less detailed. The implementation cost estimates for each reach are detatiled in Exhibit D.

Reach A combines several stabilzation methods. The construction costs include $1,555,700 for selective tree removal and pruning, vegetation maintenance, streambank and bottom stabilization, special waste disposal, and revegetation and $545,000 to replace the bridges at Main Street and

Emerson Street. The implementation costs for Reach A including mobilization, legal, administration and contingency costs total $2,709,900.

Reach B also involves thinning the shade canopy and toe protection. The implementation cost for this solution is $769,900.

Reach C is the least expensive of the four reaches because the channel has been maintained by the golf course staff. Costs for implementation are estimated to be $309,600.

Reach D requires selective tree removal, pruning and maintenance, streambank and bottom stabilization, special waste disposal, and revegetation; structural components such as bridges are not involved. The construction cost is $478,100, and, with mobilization, legal, administration and contingency costs, the implementation cost is $616,700.

Maintenance Costs

Maintenance costs vary based on the types of stabilization methods chosen. When bioengineering techniques are utilized, a normal maintenance cycle is imperative to insure adequate sunlight is provided for the continued growth or desirable plantings. Normal maintenance items would include removal of dead or damaged trees and limbs, removal of fallen materials in the creek, removal and herbiciding of all invasive tree and shrub species, as well as debris removal from the creek itself.

Costs for these items are difficult to estimate, as they could be combined or shared with other maintenance such as clearing for overhead lines. Costs would also vary based on the cycle of maintenance. A two to three-year cycle could be more cost effective than a five-year cycle by reducing cumulative problems.

Funding

Several options are available to the Village to fund the Weller Creek Streambank Stabilization project. Federal and state financial assistance may be available as matching funds to the municipality's contribution. Through a special assessment, all property owners contributing stormwater to Weller Creek may share in the implementation cost. The issuance of bonds is another option to fund the project.

Federal funds are available from the Nonpoint Source Pollution Control Program under Section 319(h) of the Clean Water Act (CWA). An application for Section 319 financial assistance for the Weller Creek Streambank Stabilization project was submitted in April 1996. The Illinois Environmental Protection Agency (IEPA) and the U.S. Environmental Protection Agency (U.S. EPA) Region 5 administer Section 319 grants. Eligible projects must address water quality issues relating directly to nonpoint source pollution. In the case of Weller Creek, nonpoint source pollution, in the form of sediment runoff, is caused by active erosion of the banks during seasonal stream flows and more severe instances of slope failure during flood events. Also, the absence of bank vegetation provides no opportunity to filter pollutants from the surface runoff before reaching the creek. By preventing erosion and establishing appropriate vegetation, the Weller Creek Streambank Stabilization project will reduce nonpoint source pollution.

Due to the limited total money available to be awarded by IEPA, the application requested funding for streambank stabilization only along Reach A excluding replacement of the Emerson Street bridge. The maximum assistance available through the Section 319 grant is 60 percent of the total project cost; the applicant is required to provide the remaining 40 percent. The Village requested $1,351,800 of Section 319 funds. A copy of the application and acknowledgment letter from IEPA are in Exhibit E.

The Illinois "Open Space Lands Acquisition and Development" (OSLAD) program and federal "Land and Water Conservation Fund" (LWCF) program are available through the Illinois Department of Natural Resources. In general, the programs provide 50 percent funding reimbursement on approved land acquisition and/or development projects for public outdoor recreation purposes. Maximum grant awards to any one project in a given year is currently limited to $200,000 for development projects. In the case of Weller Creek, the streambank stabilization project is eligible if incorporated into a development for passive recreation uses, such as foot paths, overlooks, benches and bridges on public land.

Conservation 2000, a state initiative to improve water quality, offers funds for streambank stabilization projects. The Illinois Department of Agriculture through regional Soil and Water Conservation Districts provides 60 percent matching funds to the local contribution. At this time, the funding guidelines are being redrafted and will not be available until July 1996.

The streambank stabilization project may be funded through a special service area including all stormwater contributors. In the past a drainage district was established around Weller Creek. Although the draiange district has been dissolved within Mount Prospect, it may still exist in Arlington Heights. The drainage district could be required to pay for the stormwater discharges to Weller Creek within its jurisdiction. In turn the drainage district would charge the property owners within the drainage district. If this measure is implemented, the funds collected from the drainage district would be relative to the portion of stormwater contributed.

A special assessment set up to fund the Weller Creek Streambank Stabilization project would include only the property owners directly impacted by the improvement. The assessment is based on the property value increase attributed to the project as calculated by the Village. Public hearings must be held during the process to obtain property owners' input.

Another financing option for the Weller Creek Streambank Stabilization project is the issuance of bonds. As a public improvement project, the Village has the capability to sell bonds to finance this project. The bonds are payable from real estate taxes levied against all taxable property located in the corporate limits of the municipality.

Permits

Streambank stabilization activities typically fall under the jurisdiction of one or more agencies which regulate floodplains and floodways, wetlands, and stream water quality. The regulatory permitting varies in complexity with the extent of the construction activity in or adjacent to the channel.

Three agencies have general permits which are automatically issued when a stabilization project does not exceed certain limits and will have minimal effect on the channel. The U.S. Army Corps of Engineers Nationwide Permit No. 13 primarily protects wetlands. The Illinois Department of Natural Resources - Office of Water Resources Permit No. 3 covers materials and placement. The Illinois Environmental Protection Agency Section 401 regulates water quality. The specific permit requirements of each agency are summarized in the Streambank Stabilization Program manual by the DuPage County Stormwater Management Division Department of Environmental Concerns and are included as Exhibit F.

Easement and Property Ownership

While the properties along Weller Creek are owned by individual residents, the school district, MWRDGC, the Mount Prospect Park District and the Village, most have utility easements along the channel. A utility easement gives the easement owner authority to use the area for maintenance of their facilities while the parcel owner retains the rights of ownership. Exhibit C contains figures illustrating the location of the easements, the platted channel centerline, and the actual channel centerline and top of banks along Reaches A and D.

Reach A has the most complex arrangement of property lines and easements of the four reaches. Between School Street and Main Street, Weller Creek is almost entirely contained within a 60-foot wide outlet parcel; the south bank between Emerson Street and Maple Street is encroaching upon private property as it erodes. Also in this area, two 10-foot public utility easements run adjacent to the channel, one on each side of the outlet parcel. On the north side, the 10-foot easement continues to the lots fronting Elmhurst Road; on the south side, the easement also continues but is reduced to 8 feet. Between Main Street and the lots fronting Elmhurst Road, the outlet parcel only exists along the north 30 feet of the platted centerline. The lots to the south extend to the platted centerline of the channel but contain a 30-foot drainage easement in addition to the 8-foot public utility easement. A 20-foot MWRDGC easement parallels the north 10-foot public utility easement; a gap does occur between easements as the channel bends near Wille Street. Finally, between the lots fronting Elmhurst Road, Weller Creek flows through property designated as a park.

The Mount Prospect Park District owns the property along Reaches B and C. A few MWRDGC easements cross Weller Creek at CSO locations. These easements could be eliminated if the CSOs are abandoned.

On Reach D all lots extend to the platted centerline of Weller Creek. The parcels along the west bank contain a 30- to 40-foot public utility and drainage easement. The east bank is owned by MWRDGC until the end of Weller Lane. From there a 30-foot MWRDGC easement continues to Lincoln Street.

Even though the owners of the channel and banks vary, the Village has the responsibility and right to maintain Weller Creek. The Village sewer systems contribute flow to the creek which, by Illinois state law, requires the Village to prevent damages to properties along the channel. The law also protects the Village's right to use the channel and repair the channel to guarantee continued use. Exhibit G contains the legal opinion discussing these facts.

REFERENCES

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EXHIBIT A

COMBINED SEWER OVERFLOW INVESTIGATION

Village of Arlington Heights Improvements

The Village of Arlington Heights is constructing a combined relief sewer to prevent street and basement flooding on the east side of the town. An additional drop shaft into the Tunnel and Reservoir Plan (TARP) and O'Hare Chicago Underflow Plan (CUP) Reservoir system has already been constructed in Melas Park to collect the increase in discharge. Although these improvements do not significantly change flows on Weller Creek during storms less than the 10-year event, performance will change during large storm events.

The Village of Arlington Heights combined sewer system currently drains into two rectangular sewers with a total capacity of 1,100 cfs. Low flows in these sewers are diverted into the 54-inch MWRDGC interceptor along Weller Creek and conveyed to MWRDGC Northside Water Reclamation Plant (WRP) for treatment and discharge. Wet weather flows up to 1,100 cfs are diverted into the 20-foot diameter O'Hare TARP tunnel, if there is capacity available. When the TARP tunnel fills to capacity, all wet weather flow in the existing rectangular sewers is discharged into Weller Creek.

Arlington Heights is constructing an additional 108-inch diameter sewer which connects through the second drop shaft to the O'Hare TARP tunnel in Melas Park. The system is designed to operate in conjunction with the O'Hare CUP Reservoir, which is also under construction. Preliminary calculations presented in the O'Hare TARP System design memorandum indicate the two Melas Park dropshafts will become submerged when the O'Hare CUP Reservoir reaches elevation 600 ft. (National Geodetic Vertical Datum). This is expected to occur when the 28-year storm is exceeded. This submerged condition will reduce the capacity of the proposed 108-inch relief sewer to 400 cfs. Thus, the total discharge capacity of the Arlington Heights outfalls to Weller Creek will increase from 1,100 to 1,500 cfs. Higher velocities and an increase in flooding elevations can be expected downstream of Central Road on Weller Creek.

According to the "Weller Creek Sewer System Facilities Plan Report," by Harza Environmental

Services Inc. (1994), the proposed 108-inch relief sewer and drop shaft will provide 700 cfs additional capacity. Construction of the relief sewer is scheduled to be completed by the end of 1996, and the O'Hare CUP Reservoir is tentatively scheduled to be online in Spring 1997. According to MWRDGC staff, the reservoir may not be completed on schedule. The additional 700 cfs from these improvements in the Village of Arlington Heights will not be allowed into the TARP/CUP System until the reservoir is in operation. The Village of Arlington Heights has not indicated what will be done with the excess discharge between the times the relief sewer is complete and the CUP reservoir is operating.

The 1994 Harza report also states the pollutant load on Weller Creek will be reduced by the improvements to the Village of Arlington Heights combined sewer system. This reduction will be realized because the overflows into Weller Creek will occur less often, only when the gates to TARP are closed. Also, the accumulated pollutants in the combined sewer will be flushed into the TARP system before an overflow occurs; therefore, the overflow discharge into Weller Creek will be more dilute.

A National Pollution Discharge Elimination System (NPDES) permit is on file with Illinois Environmental Protection Agency (IEPA) for this CSO. Conditions of the permit require public notification of an overflow occurrence, ideally by a published announcement in a newspaper. The Village of Arlington Heights fulfills the notification requirement by having the information available at the village hall; thus, citizens are notified only when a specific inquiry is made.

Typically, installation of a CSO does not result in a substantial increase of flows on local waterways. However, the proposed Arlington Heights facility has the potential to increase stream flows by up to 400 cfs. According to Illinois Department of Natural Resources-Office of Water Resources (IDNR-OWR), the regulatory agency responsible for waterways in Illinois, the effect on base flood elevation has not been evaluated for the increase in flow due to the proposed Melas Park CSO. Analysis of the timing of the peak flows on Weller Creek and the overflow of the Arlington Heights

and TARP systems could predict the changes to the water surface profile during a 100-year event. If 100-year water surface elevations increase, this would enlarge the floodplain boundaries along Weller Creek. It is not known whether the Village of Arlington Heights has performed an investigation of the effect of the flow increase on flood stages in Weller Creek.

Impacts of Arlington Heights Improvements on Weller Creek

Statements in various MWRDGC, Arlington Heights, and Harza Engineering documents can be used to piece together a general idea of the changes in flows on Weller Creek. Once the O'Hare CUP reservoir is in operation, all runoff during small storms will be diverted in the O'Hare TARP/CUP storage system and the flow in Weller Creek will not increase. However, when the storage system begins to approach its full capacity during large storms, MWRDGC will close the gates regulating dropshaft inflows and initiate overflow into Weller Creek. The gates are closed gradually, but without warning.

According to MWRDGC, the TARP/CUP storage capacity is expected to be exceeded on average once every 28 years. The basis of this estimate and its reliability is not known. However, it can be concluded that the 100-year flow in Weller Creek will increase as a result of the additional flow capacity. The amount of the flow increase can be determined only through a comprehensive hydrologic study of the tributary watershed and analysis of the operation of the sewer systems. The upper limit of the increase is approximately 400 cfs, which is the maximum capacity provided by the Arlington Heights improvements.

A hydraulic analysis was conducted using the current regulatory flood profile model for Weller Creek. The model is in the WSP-2 hydraulic model format (NRCS, 1994). The WSP-2 model indicates a flow increase of 400 cfs in the 100-year event would result in increased 100-year stages of approximately 0.4 to 1.2 feet.

Base Flow, Non-CSO Flows, and Other Sources of Flow in Weller Creek

Since 1979, the Village of Arlington Heights has stored stormwater, from a separate sewer area, in a detention reservoir located in Melas Park. Dry weather flow, due to infiltration, cross- connections and underdrains of the detention reservoir, bypasses the reservoir and is periodically pumped through a 24-inch force main into Weller Creek; this pumpage accounts for a portion of the base flow in Weller Creek. During storm events, the first 17 cfs of stormwater runoff bypasses the reservoir and drains directly into Weller Creek. Stormwater runoff flow greater than 17 cfs is diverted into the reservoir and detained. When the flow in Weller Creek falls below 1,000 cfs, the reservoir is drained by pumps which discharge through the 24-inch force main. Design operating criteria for this facility was obtained from the Village of Arlington Heights. Construction plans for the reservoir and the pumping system are available from MWRDGC and the Village of Mount Prospect.

The IDOT storm sewer along Central Road also contributes stormwater to Weller Creek. IDOT plans indicate the storm sewer originates more than one mile west of Weller Creek, on Arlington Heights Road. This system may contribute some base flow to Weller Creek, in the form of infiltration and cross connections.

EXHIBIT B

WELLER CREEK AD-HOC COMMITTEE MEETING MINUTES

Village of Mount Prospect
Weller Creek Ad Hoc Committee

Meeting of August 21, 1995

PRESENT: George Kies, Vicky Bayer, Maureen Majerus, Phil Johnson, Scott Davis, Dolores Hanvey, and Grace DeVito.

Michaele Skowron - Village Trustee
Melcy Pond, Paul Schwarz, Denise Bannon - RUST E&I
Glen R. Andler - Director of Public Works
Sean P. Dorsey - Deputy Director of Public Works

CALL TO ORDER: Chairman DeVito called the meeting to order at 7:05 PM.

INTRODUCTIONS:
Introduced were Glen Andler, Director of Public Works, Sean Dorsey, Deputy Director of Public Works, Paul Schwarz, RUST, Melcy Pond, RUST, George Kies, 202 E. Hiawatha, Vicky Bayer, 9 W. Berkshire, Maureen Majerus, 205 E. Berkshire, Grace DeVito, 701 S. Main, Michaele Skowron, Village Trustee, Phil Johnson, 306 E. Hiawatha, Scott Davis, 104 E. Hiawatha, Dolores Hanvey, 10 W. Hiawatha, Denise Bannon, RUST.

PROJECT SCOPE
Melcy Pond described project scope:

Data Collection and Field Reconnaissance
Ms. Pond explained that RUST staff was currently in the field reconnaissance and data collection phases of the project. These phases include a physical examination of the creek, a land survey of the channel, review of plats, inspection of problem areas, and identification of structures installed along creek. The purpose of these phases is to develop an overall "feel" for the channel. Data collection and reconnaissance should be complete by mid-September.

Hydraulic Analysis
Hydraulic analysis of the channel will be performed. A hydraulic model approved by the Illinois Department of Natural Resources (IDNR) will be used. A "100 Year Storm" model will be used. Analysis will attempt to identify the effect of the Metropolitan Water Reclamation District Chicagoland Underflow Plan reservoir at O'Hare Airport on the channel. Analysis will also examine the feasibility of removing combined sewer overflow (CSO) discharge pipes installed along creek banks. An examination of bridges and creek cross sections will be included.

Problem Prioritization
Problems identified in the data collection and field reconnaissance phases will be classified in one of three categories: slight, moderate, or severe.

Alternative Analysis
Alternatives to resolve creek erosion problem will be developed. Criteria will include regulatory constraints, committee design preferences, desired level of protection, maintenance, and right-of-way issues. Alternatives will present general concept plans for solving creek erosion problems.

Public Involvement
Four (4) meetings are planned with the ad hoc committee. RUST also plans on attending two (2) village board Committee of the Whole (COW) meetings to discuss project findings and committee recommendations. RUST also plans on establishing lines of communication between committee and IDNR, U.S. Army Corp of Engineers, Illinois Department of Transportation (IDOT), and other organizations impacted by creek erosion problem. Role of committee members as conduits for spreading information to neighbors and bringing feedback to the committee is essential.

Cost Estimates and Funding
RUST will develop a general estimate of how much recommended alternative(s) will cost. An examination of funding options will also be made.

Report
A comprehensive report detailing research and recommendations will be prepared for presentation to the village board.

PROJECT SCHEDULE
Work has already begun on data collection and field reconnaissance phases. These phases should be complete by mid-September. Hydraulic analysis should be complete by mid-October and alternative analysis should be done by mid-January. Village board presentations are tentatively scheduled for COW meetings in January and February. A copy of proposed schedule is attached.

COMMITTEE CONCERNS

Priority Status of Each Reach
Reach A is Priority 1.
Reach D is Priority 2.
Reaches B and C are Priority 3.

Temporary Solutions
RUST will suggest temporary or stop-gap solutions that may be applicable if a long term solution will not be implemented for an extended period of time.

Storm Sewer Drainage Structures
Culvert pipe at Main Street will be removed and a bona fide street drainage system will be installed. All other storm sewer discharges into creek will be incorporated into bank stabilization plan.

Tree Removals
Trees along creek banks will be coded into one of four classifications:
1. Trees that can remain no matter what.
2. Trees that must be removed no matter what.

3. Trees that may stay or be removed depending on which solution is implemented.
4. Trees that require pruning.

Trees will be color-coded so property owners can see how proposed tree work will impact their property before work begins.

OTHER BUSINESS

Mr. Davis inquired as to whether or not shrubs or some trees will be allowed to remain at the bank tops to provide a visual screen. Ms. Pond and Mr. Schwarz advised the committee that it may be possible for some bank top trees and shrubs to remain. However, they noted that they cannot accurately describe to what extent this may be possible until they have completed data collection and analysis. Mr. Schwarz added that the purpose of removing trees and shrubs from the creek banks is to increase the amount of sunlight on the bank slopes. If trees or shrubs on the bank tops block sunlight from the slopes, they will probably have to be removed. It is feasible that as many as 50% of the trees on the creek banks may have to be removed.

Mr. Davis inquired as to whether or not bioengineering solutions are viable for Weller Creek. Ms. Pond advised the committee that such a determination cannot be made until all the data has been analyzed.

Ms. Majerus inquired as to why grassy root systems are preferred to tree root systems. Mr. Schwarz advised the committee that some tree roots are very shallow and offer no support for the weight of the tree when creek channel erosion undermines the slope. In addition, Mr. Schwarz explained that grasses help improve channel flow by laying down during high flows. Trees on the lower banks tend to create disturbances in the flow that can cause back-ups and upstream flooding.

Ms. Bayer commented that many people with property abutting the creek are concerned about the aesthetic effects the project will have on their properties. Many people enjoy the trees and foliage along the creek banks.

Mr. Davis suggested that it would be helpful if people could have a vision of what the creek will look like 5-10 years after erosion solutions are implemented. Mr. Davis also suggested that the major concerns of people living along the creek are trees, sewers, and aesthetics.

Mr. Davis commented that it will be important to consider the timing of planned tree removals along Route 83 and how that work will impact nearby property owners adjacent to the creek. The removal of trees on Route 83 and the possible simultaneous removal of trees along the creek could have a dramatic impact.

Ms. Bayer and Ms. Hanvey explained that some residents with property along the creek have installed bank stabilization systems on their own. Some of these systems have been installed for many years. They questioned how these improvements will be treated. Will they have to be removed? Ms. Pond explained that stabilization systems correctly installed with a positive effect on the creek's hydraulics can remain. Stabilization systems that adversely affect channel hydraulics will have to be removed.

Chairman DeVito commented that she believed property owners with bank stabilization systems owned property out to the middle of the creek. She also noted that the majority of homeowners

in Reach A do not own to the middle of the creek and therefore have not made any bank stabilization improvements. Chairman DeVito also commented that the development of stop-gap measures for bank stabilization is important because many houses are positioned very close the creek banks and any further erosion that may occur between now final implementation of the recommended solution could cause severe damage to these structures.

Chairman DeVito inquired as to how the Des Plaines River could be at or near flood stage while Weller Creek has low flow. Ms. Pond suggested that Weller Creek most likely is at a higher elevation than the Des Plaines River.

Mr. Davis inquired as to how the committee could communicate with the public about the tree removals. Ms. Pond responded that a pamphlet would be prepared detailing the work and explaining what the color coding of the trees means. Mr. Davis also inquired as to whether or not the condition of the bridges would be considered. Ms. Pond advised the committee that the effect of bridge structures on the channel flow would be included in their analysis. Ms. Pond also informed the committee that they would maintain lines of communication with IDOT to make sure that planned improvements for the Route 83 bridge fit in with the general concept plan to stabilize the Weller Creek banks.

Chairman DeVito inquired as to who has maintenance responsibility for the creek. Public Works Director Andler explained that the village had sponsored bank stabilization programs for Weller Creek in the past. However, these programs had been suspended when public opposition to the programs became strong. Currently, village staff only has direction to remove objects obstructing the flow line. Ms. Pond explained that the IDNR has regulatory authority over the creek. They do not have ownership. She also mentioned that the MWRD and village storm sewer systems discharge water to the creek. RUST will establish ownership and maintenance responsibilities as part of this project.

Ms. Bayer requested that committee members offer a brief description of the concerns and/or personal experience(s) that prompted them to volunteer to participate in this study:

Mr. Kies, 202 E. Hiawatha: Has experienced severe erosion along his property and recently spent a large amount of private funds to stabilize the creek bank near his property despite the fact that he does not own to the middle of the creek. Would like to see something done to help all property owners with erosion problems.

Ms. Bayer, 9 W. Berkshire: Concerned about tree removals and property aesthetics.

Ms. Majerus, 205 E. Berkshire: Neighbors have lost property to bank erosion. Concerned about tree removals. Believes creek erosion problem must be solved but would like to see a solution that keeps the trees.

Chairman DeVito, 701 S. Main: Concerned about losing more bank near her property. Her house is positioned within 15' of the creek bank. Concerned about trees uprooting during high flows and removing more creek bank when they fall. Also concerned about creek bank erosion problems throughout the entire neighborhood. Appreciates concern and attention that the village board has given to this issue.

Mr. Johnson, 306 E. Hiawatha: Owns two lots adjacent to creek and has lost some property to erosion. Feels creek needs maintenance.

Mr. Davis, 104 E. Hiawatha: Feels present creek condition is dangerous for children. Feels community should take a proactive approach to solving creek erosion problems. Also commented that flood plain restrictions prevent fence installation along creek banks thereby limiting a homeowner's ability to keep children away from dangerously eroded areas.

Ms. Hanvey, 10 W. Hiawatha: Concerned about trees on her bank falling over and causing damage to neighbors. She owns property to the middle of the creek. Neighbors have installed bank stabilization systems and the bank near her property is scoured. Has experienced severe bank erosion. Is in favor of an organized solution.

Trustee Skowron: Thanked all committee members for volunteering to help solve Weller Creek problems.

NEXT MEETING
The next scheduled meeting of the Weller Creek Ad Hoc Committee will be on Saturday, September 30, 1995. A field trip to view installed bank stabilization techniques in Palatine and Downers Grove is planned. The meeting will convene at 8:00 AM at the Public Works Facility and should last 4-5 hours.

ADJOURNMENT
There be no further business to discuss, the meeting was adjourned at 8:40 PM.

Respectfully Submitted,

Sean P. Dorsey
Deputy Director of Public Works

Village of Mount Prospect
Weller Creek Ad Hoc Committee

Meeting of September 30, 1995

PRESENT: George Kies, Vicky Bayer, Maureen Majerus, Phil Johnson, Scott Davis, Dolores Hanvey, and Grace DeVito.

Michaele Skowron - Village Trustee
Melcy Pond, Paul Schwarz, - RUST E&I
Glen R. Andler - Director of Public Works
Sean P. Dorsey - Deputy Director of Public Works
Sandy Clark - Forestry/Grounds Superintendent

CALL TO ORDER: Chairman DeVito called the meeting to order at 8:10 AM.

APPROVAL OF MINUTES
The minutes of the August 21, 1995 meeting were unanimously approved.

DEPART FOR TOUR

Weller Creek

Weller Creek near 208 W. Hiawatha. Committee entered creek and observed bank scouring and exposed tree root systems caused by improperly installed piecemeal bank stabilization methods. The Committee also observed dense tree growth on banks and the lack of bank vegetation resulting from the extensive canopy. A considerable number of dead trees and unpruned limbs near overhead utility wires were also noted.

Weller Creek near 701 S. Main. Committee entered creek and observed extensive bank destabilization in close proximity to homes and private property. Stream obstructions caused by property owners dumping yard waste on the banks were also observed. The extensive tree canopy was noted. However, the Committee was also able to observe the emergence of grasses and their stabilizing root systems at points along the north bank where the tree canopy subsided. Public Works Director Andler also pointed out the accessibility problems for maintenance crews.

Weller Creek at William Street Bridge. Committee observed bank stabilization installed by the Village in the early 1980s. East of the bridge gabions were used to stabilize the banks. West of the bridge, monoslabs were installed. Vegetative growth has since recovered both banks. Public Works Director Andler noted that effective tree and bush screens have been installed along the tops of the banks. He also noted that both rehabilitated sections are easily maintained by public works crews utilizing mechanized equipment.

Weller Creek at Weller Lane. Committee observed properly installed riprap spillway for Crumley Detention Basin. Riprap is reinforced by concrete mortar to prevent boulders from moving into channel flow. Committee also noted Combined Sewer Overflow discharge structure at Central Road.

Palatine

Salt Creek at Helen Road Bridge. Committee observed lunkers system installed along the outer bank of a channel bend. Lunkers were used to halt erosion along the toe of the bank. Trees and shrubs had been removed from the bank. Lunkers were installed and backfill was added to slope the bank. Low growing willow shoots had been planted and grasses had begun to emerge. System was installed this past Spring. RUST representatives pointed out that lunkers create a sheltered area that can be used to reintroduce fish and aquatic life.

Salt Creek at Hicks Road & Pebble. Committee observed hard engineering solution several miles downstream of lunkers system. A metal sheeting retaining wall had been installed along outer bank of sharp channel curve. A couple hundred feet downstream, the Committee observed tiered gabions installed along a steep outer bank on a gradual channel curve. RUST representatives suggested that these types of hard engineering solutions are most often employed when concern for stopping bank degradation and property loss takes precedence over aesthetics.

Salt Creek at Locust Park on Morris Drive. Committee observed extensively landscaped gabion system installed along steep bank abutting private property. Public Works Director Andler noted that the Village of Palatine had installed the gabions and the homeowner installed and maintained the landscaping. Approximately 300 feet upstream, the Committee observed a recently installed A-Jacks system. The A-Jacks system utilizes individually placed, interlocking concrete structures installed along the toe line of the bank. Membrane encased soil materials were layered on top of the concrete structures. Backfill was added to slope the bank and grasses were planted. The Committee noted that the system had accommodated a couple of mature trees at mid-bank elevations. However, a large number of trees were also removed to allow sunlight on the renovated bank.

Downers Grove

The Downers Grove site visit was canceled due to the wide variety of bank stabilization techniques available for review in Palatine's Salt Creek and Mount Prospect's Weller Creek.

OTHER BUSINESS
No other business was introduced.

NEXT MEETING
Village staff will contact Committee members and schedule the next meeting after RUST has completed videotaping Weller Creek and analyzing field data. RUST and village staff anticipate that the next meeting will be held in November.

ADJOURNMENT
There being no further business, the meeting was adjourned upon return to the Public Works Facility at approximately 12:50 PM.

Respectfully Submitted,

Sean P. Dorsey
Deputy Director of Public Works

Village of Mount Prospect
Weller Creek Ad Hoc Committee

Meeting of November 20, 1995

PRESENT: Phil Johnson, Dolores Hanvey, and Grace DeVito.

George Kies arrived at 7:15 PM.
Scott Davis arrived at 7:20 PM.

Michaele Skowron - Village Trustee
Melcy Pond, Paul Schwartz, - RUST E&I
Glen R. Andler - Director of Public Works
Sean P. Dorsey - Deputy Director of Public Works
Sandy Clark - Forestry/Grounds Superintendent

ABSENT: Maureen Majerus, Vicky Bayer.

CALL TO ORDER: Chairman DeVito called the meeting to order at 7:00 PM.

APPROVAL OF MINUTES
The minutes of the September 30, 1995 meeting were unanimously approved.

VIDEO PRESENTATION

Melcy Pond prefaced the video presentation by advising the Committee of current project status. Field data collection and analysis are complete. Problem prioritization is complete. Alternative analysis, public participation, and discussions with regulatory agencies are ongoing. The hydraulic model has been identified but must be modified to incorporate bridges and other structures in Weller Creek. Development of cost estimates will begin after this meeting. Final report preparation remains pending.

Trustee Skowron asked if the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) had indicated whether or not they would be willing to remove the Combined Sewer Overflow (CSO) discharge structures installed along the creek. Public Works Director Andler explained that the MWRDGC has been irresolute on the subject. When approached from the context of Weller Creek rehabilitation, the MWRDGC has indicated that they would not permit removal of the CSO discharge structures. When discussed in terms of ownership and maintenance responsibility, they claim they do not own or have any responsibility for the discharge structures. The issue remains pending.

Chairman DeVito asked whether or not possible project funding options incorporating pollution remediation requirements would be jeopardized if the CSO structures were not removed. Melcy Pond advised the Committee that the structures would not block funding as long as they are properly registered and permitted by the Illinois Environmental Protection Agency (IEPA).

Paul Schwartz reviewed project protocol. For purposes of analysis, the creek has been divided into four (4) distinct reaches. Reach A stretches from School Street to Elmhurst Road and primarily dissects single family residential properties. Reach B runs through Mount Prospect Park District property between Elmhurst Road and See Gwun Avenue. Reach C carves through the park district golf course between See Gwun Avenue and Lincoln Street. Reach D abuts single family residential properties between Lincoln Street and Central Road.

Mr. Schwartz noted that the worst problems appear to be in Reach A. These problems include extensive bank and toe erosion associated with the dense tree canopy; a large number of undercut trees and exposed root systems; a true creek course that has varied outside the platted creek boundaries; limited access points for maintenance crews; and an undermined bridge structure at Main Street. Reach D ranks second in terms of problem prioritization. Reach D runs much truer than Reach A and has much more consistent flows. The problems in Reach D are bank and toe erosion associated with the tree canopy; undercut and exposed tree root systems; and extensive erosion near the numerous drainage discharge structures installed within the reach. Reach B primarily has erosion along the toe of the bank. Reach C has much fewer trees and considerably fewer problems with bank stabilization than the rest of the creek. However, some toe and bank erosion is evident in Reach C.

Mr. Schwartz explained that RUST staff walked the entire length of the creek and videotaped their journey from a water-level perspective. The videotapes are in VHS format and have a total run time over two (2) hours. For the sake of brevity, Village staff edited the tapes and created a condensed version highlighting typical problems in Reach A and Reach D. The total run time of the condensed tape is approximately 16 minutes.

Mr. Schwartz presented a conceptual drawing noting property lines, existing creek centerline and top of bank locations, platted creek centerline, and available easement information. Highlights of the drawing are the existing centerline deviations from the platted creek course and a 30 foot wide easement on a large expanse of land that has no owner(s) of record.

Videotape presentation began at the School Street bridge noting existing conditions of the monoslab bank stabilization installed by the Village in the early 1980s.

Chairman DeVito asked if the Village performed regular maintenance in the areas where bank stabilization has been installed. Public Works Director Andler explained that Village staff regularly maintain the grasses, shrubs, and trees in the stabilized areas using mechanized equipment.

Videotape presentation portrayed Reach A upstream of monoslab treatment. In this segment, the creek runs relatively true, but has extremely steep eroded banks, sandy soils, eroded toe lines, an extensive tree canopy, and a large number of undercut trees with exposed root systems. Highlighted are trees, sheds, fences, and other structures positioned precariously near the top of the banks.

Chairman DeVito noted the extensive erosion around a drainage pipe and asked what it was connected to. Mr. Schwartz advised the Committee that most of the drainage structures appeared to be connected to sump pumps, area drains, or street drainage systems.

Mr. Schwartz noted opposing bank scouring associated with some bank stabilization attempts.

Mr. Schwartz noted channel-bottom scouring associated with drainage discharge structures.

Mr. Schwartz noted extensive amount of yard waste and debris deposited along banks.

Chairman DeVito asked what soil types were noted along the banks. Mr. Schwartz replied that sand seams were noted throughout the creek. Sandy soils combined with steep slopes tend to result in an accelerated rate of erosion because soils losses from water action along the toe are quickly followed by soil losses higher up the bank.

Mr. Schwartz presented a conceptual drawing depicting existing conditions near the Main Street foot bridge. Mr. Schwartz identified this area as one of the worst in the creek. Highlighted were the steep slopes, heavy tree canopy, undercut trees, elevated street drainage structures, and an extensively undermined bridge foundation. Mr. Schwartz commented that recommended solutions for these problems would include some type of retaining wall along the south bank, reconfiguration of the drainage structures to discharge at water level, reconstruction of the bridge, and establishment of an access ramp along the north bank.

Public Works Director Andler noted deck of the Emerson Street bridge is too low. To correct this problem, the bridge will have to be reconstructed. Mr. Andler suggested that it might be advisable to extend a retaining wall along the south bank and tie it into the new bridge foundation. Mr. Schwartz agreed that such a configuration would probably be the optimal solution for the south bank in that stretch of the creek.

Chairman DeVito asked if sump pump discharges adjacent to the top of the bank saturated the soils and contributed to the erosion problem. Mr. Schwartz stated it was his opinion that most of the bank destabilization in the creek could be attributed to toe erosion. Overland flows do not seem to be creating a problem.

Public Works Director Andler noted the stretch between Emerson Street and School Street seemed to be fairly straight and would require minimal excavation or backfill. Village staff, in consultation with RUST, has indicated a preference for the A-Jacks bio-engineering solution in this stretch. The primary effort in this stretch will be to re-establish the toe and allow sunlight to reach the bank slopes. A hard engineering solution, including a retaining wall, drainage structures, and bridge modifications would be required near Main Street.

Videotape presentation noted retaining wall and bank stabilization structure near 14 West Hiawatha / 101 West Berkshire. Mr. Schwartz commented that structure appears to extend to the platted centerline of the creek. Mr. Schwartz surmised that this privately installed bank stabilization system, and others like it, may have played a role in shifting the course of the creek.

Mr. Schwartz presented a conceptual drawing depicting the typical cross section of the creek in this area. The south bank has been extended and backfilled forcing extensive erosion and, in some cases, private property loss along the north bank. At minimum, a solution to this type of problem would involve re-establishing the toe lines, backfilling and re-establishing the north slope, removing failing bank stabilization systems on the south bank, and sloping the south bank.

Chairman DeVito asked if RUST was advocating that no attempt be made to return the creek to the platted centerline. Mr. Schwartz responded that RUST was trying to present all the options available to the Village. Returning the creek to its platted centerline could be accomplished and be an effective bank stabilization solution. Such a solution would be more labor-intensive and

require the cooperation of private property owners. In addition, considerations may have to be made to make sure that Illinois Department of Natural Resources (IDNR) permit requirements would be satisfied. Mr. Schwartz commented that a completely correct solution would involve returning the creek to its platted centerline and returning usable land back to north bank property owners.

Chairman DeVito asked if a recommendation was going to be made for a standard channel width throughout the creek. Mr. Schwartz and Mr. Andler responded that the channel width should be approximately 12 feet to assure maintenance access. RUST and Village staff are not advocating the establishment of an identical cross-section throughout the creek. Furthermore, hydraulic calculations may modify the width at various locations.

Video presentation depicted retaining wall along north bank near 208 West Hiawatha. Mr. Schwartz commented that the wall appeared to be effectively stabilizing the north bank. However, he noted that the wall had caused a scouring effect on the opposite bank resulting in extensively undercut trees, exposed root systems, and significant bank/toe erosion.

Video presentation depicted Elmhurst Road bridge. Mr. Davis asked if the bridge was going to be modified by the pending Elmhurst Road reconstruction project. Public Works Director Andler advised the Committee that bridge modifications will be incorporated into the Elmhurst Road project. Mr. Andler also commented that RUST has initiated conversations with the Illinois Department of Transportation in an effort to make sure that bridge modifications are consistent with Village efforts to stabilize the banks along the creek. For example, the Village may request a foundation alignment or poured concrete channel angle that would lessen downstream scouring.

Video presentation depicted Reach D looking north form the Lincoln Street bridge. Mr. Schwartz commented that the creek runs true to its platted centerline in this stretch. Problems in this area are extensive erosion along the toe compounded by bank erosion associated with the extensive tree canopy. In addition, this stretch features a number of drainage structures creating scouring and erosion problems.

Mr. Davis asked if RUST noticed concrete chunks dumped along the bank in this reach. Public Works Director Andler suggested that the concrete Mr. Davis noticed was part of a concrete block spillway for the Whispering Creek Subdivision retention pond.

Video presentation depicted the head end of Weller Creek at the Central Road bridge. Chairman DeVito asked which of the three pipes shown were the source of creek waters. Public Works Director Andler responded that the pipe on the left (west) contained the storm sewer flows that are the creek's source waters. The pipes on the right (east) are the CSO structures for the MWRDGC and Village of Arlington Heights sewer systems.

Chairman DeVito asked where the storm sewers were coming from. Melcy Pond advised the Committee that their research indicated that the storm sewer at the head end of Weller Creek originates in Arlington Heights.

Chairman DeVito asked if Arlington Heights is required to do anything to correct their sewer systems. Melcy Pond responded that Arlington Heights already made considerable effort to reduce their combined sewer overflows. They have separated their storm flows and have recently established a connection to the Tunnel and Reservoir Plan (TARP) system (i.e. deep

tunnel) at the Melas Park drop shaft. However, the MWRDGC has required that the CSO structure at the head end of Weller Creek be maintained. MWRDGC has operational control over the combined sewer interceptor system. It is possible that the MWRDGC could elect to relieve the interceptor system into Weller Creek during a rain event. On a day-to-day basis, however, the CSO structures do not contribute flows to Weller Creek.

Video presentation depicted Weller Creek west of Elmhurst Road bridge. Mr. Schwartz commented that the fix for this reach of the creek seems to be fairly simple. The water levels seem consistent and the upper banks are relatively stable. Most of the erosion in this reach takes place at the toe. A possible solution would involve installing a coconut fiber roll in the cavity at the toe to halt erosion and support the upper bank.

Mr. Schwartz concluded the video presentation by suggesting that the Village needs to make some decisions about how creek rehabilitation will be phased, whether or not maintenance access will be incorporated into the project, and whether or not an effort will be made to return the creek to its platted course.

Melcy Pond added that all of the solutions discussed involve clearing trees from the banks to allow sunlight on the slopes.

Mr. Davis asked if a determination had been made as to how many trees will have to be removed. Public Works Director Andler explained that quantification of tree removals is difficult. To begin with, ComEd maintains utility poles along the north bank. To limit the likelihood of electrical power interruption, their tree trimming crews will soon begin working along the creek. Their pruning efforts tend to considerably reshape the trees. The effect of this work along the north bank will probably be dramatic. Unfortunately, trimming efforts along the north bank will do little to increase the sunlight exposure on the bank slopes. To accomplish this, considerable trimming and removing will have to be performed on the south bank. Mr. Andler further explained that the whole concept of bio-engineering is predicated on the notion that there is no identical cross-section. Bio-engineering attempts to stabilize the banks while maintaining a natural feel. Considering this concept in conjunction with the fact that several distinct types of erosion problems have identified throughout the creek makes it very difficult to identify which trees will have to be removed. Needless to say, trees that are undercut or are in the flow line will definitely be removed. Beyond that, enough trees will have to removed to support the bank stabilization system selected for each segment.

Public Works Director Andler also noted that the installation of some type of permanent channel bottom should be considered at least for problem areas where sandy soils and extensive channel scouring deny maintenance access.

Chairman DeVito asked if it has been determined who has maintenance responsibility for the creek. Public Works Director Andler responded that the issue remains unresolved. Property ownership has not been clarified. Most notably, ownership of most of the property on which the 30 foot wide creek easement is platted has yet to be established. In addition, MWRDGC has denied any maintenance responsibility for the creek despite the fact that it owns parcels of land on which the creek is sited. Mr. Andler also noted that the MWRDGC routinely performs maintenance on the Feehanville Ditch on the north side of town. The Feehanville Ditch receives waters from an MWRDGC interceptor overflow near Rand Road & Business Center Drive. Village staff supports this effort by hauling away debris removed from the ditch by MWRDGC maintenance crews. MWRDGC presently does not perform this type of work in Weller Creek.

Mr. Davis asked if the decision to stabilize the banks in Weller Creek would have to take the form of a referendum. Trustee Skowron explained the Home Rule powers exercised by the Village Board and advised the Committee that a referendum would not be required to make a decision or fund a bank stabilization project. However, she also noted that even though such a referendum is not necessary, it should not automatically be precluded.

Mr. Davis noted that all of the bio-engineering solutions discussed involved "replantings". Mr. Davis asked what type of plants would be introduced to the slopes. Melcy Pond responded that plants that would not contribute to the canopy would be selected. These plants would probably include grasses, and low growing shrubs.

Chairman DeVito suggested that some type of planting guidelines should be established so that property owners don't re-establish the canopy over time. Mr. Schwartz agreed to develop some general guidelines for distribution to property owners.

OTHER BUSINESS

Public Works Director Andler advised the Committee that RUST and Village staff plan to make a presentation to the Village Board at the Committee of the Whole meeting scheduled for Tuesday, December 12, 1995 at 7:30 PM. Mr. Andler invited all Ad Hoc Committee members to attend the meeting and suggested that comments from Committee members, either individually or collectively, would be appropriate.

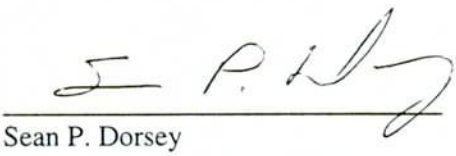
NEXT MEETING

The next meeting will be Monday, January 29, 1996 at the Public Works Facility.

ADJOURNMENT

There being no further business, the meeting was adjourned at 9:15 PM.

Respectfully Submitted,



Sean P. Dorsey
Deputy Director of Public Works

DRAFT

Village of Mount Prospect
Weller Creek Ad Hoc Committee

Meeting of June 4, 1996

PRESENT: Phil Johnson, Scott Davis, Grace DeVito, Maureen Majerus, Dolores Hanvey, George Kies.

Melcy Pond - RUST E&I
Paul Schwartz - RUST E&I
Glen R. Andler - Director of Public Works
Sean P. Dorsey - Deputy Director of Public Works

ABSENT: Vicky Bayer.

CALL TO ORDER: Chairman DeVito called the meeting to order at 7:15 PM.

APPROVAL OF MINUTES
The minutes of the November 20, 1995 meeting were unanimously approved.

RUST REPORT PRESENTATION

NOTE: Draft versions of RUST's Final Report were distributed to Committee members several days prior to the meeting. Committee members were asked to review the report and prepare to discuss their comments at this meeting. In addition to the comments recorded below, minor formatting and spelling corrections were also discussed during this meeting.

Public Works Director Andler suggested that the most efficient way to review the report as a group would be to work through the report from beginning to end; stopping for discussion when Committee members and/or staff raised issues. The Committee unanimously concurred.

Chairman DeVito expressed concern that many residents with property abutting Weller Creek are still largely unaware of proposed plans to stabilize the creek banks despite the best efforts of committee members and Village staff to spread the word. She cited the poor resident turn-out at the December Committee of the Whole meeting as a specific example. Scott Davis suggested that resident interest will peak when specific solutions are proposed and actual financing options are discussed. Public Works Director Andler commented that in his opinion, Committee members and Village staff have been very proactive about publicizing developments. Communication efforts have included door-to-door efforts by Committee members and distribution of periodic update flyers to all property owners adjacent to the creek by Village staff. In addition, the December Committee of the Whole meeting was televised and covered by local newspapers , all Ad Hoc Committee meetings have been open to the public, and the VHS videotape of existing conditions along the creek has been available for loan at the library for several months.

Chairman DeVito asked for clarification of the Weller Creek watershed. Melcy Pond explained that the Weller Creek watershed is a geographic region, comprised mostly of Northwest Mount Prospect and Southeast Arlington Heights, where, if a drop of rain fell, it would wind up draining

into Weller Creek. Public Works Director Andler pointed out that Mount Prospect is dissected by a couple of waterways including Weller Creek, Higgins Creek, Feehanville Creek, and McDonald Creek. Each of these waterways supports a different watershed. The boundaries of each watershed are difficult to determine given the extensive development and re-development of this area. At the very least, the concept of a watershed introduces the idea that an area much larger than just the properties adjacent to a creek contribute flows to the waterway.

Public Works Director Andler suggested that RUST's description of the "natural meander" of the creek was inaccurate. Paul Schwartz concurred and agreed to modify report verbiage to specifically describe the fact that the existing course of the creek has been pushed outside it's true course by a patchwork of individual property owners' bank stabilization attempts.

Public Works Director Andler corrected RUST's description of bridges crossing Weller Creek and certain street type abbreviations.

Chairman DeVito requested clarification of a facility described by RUST as an "unnamed detention basin". Public Works Director Andler explained that the facility was required as part of the development of the subdivision. The basin discharges to Weller Creek via an outflow pipe w/restrictor. The basin and restrictor were engineered so that the timing of flows from the subdivision to the creek remains essentially the same as when the area was undeveloped, pervious land.

Scott Davis requested clarification on the disposition of CSO (Combined Sewer Overflow) structures along Weller Creek. Public Works Director Andler clarified that the Village intends to abandon and physically remove the CSO structures from Weller Creek.

Public Works Director Andler noted that RUST provided flood level elevations based on hydraulic analysis but did not provide existing bridge deck elevations. Mr. Andler requested that the deck elevations be included in the final report.

Chairman DeVito requested clarification of a "100 Year Storm". Melcy Pond explained that the term is a bit of a misnomer. The term should not be interpreted as an attempt to describe an event that will occur once every 100 years. Rather, the term is meant to suggest that on any given day, there is a 1% chance that a storm of such severity could strike. On the very next day, there is also a 1% chance that a 100 Year Storm could occur. It is possible, although unlikely, that you could have a 100 Year Storm two or more days in a row. A 100 Year Storm equates to approximately 7 inches of rain within a 24 hour period. However, the term can be equated to storm events that vary in length and rainfall intensity.

Public Works Director Andler advised the Committee that the Village intends to investigate how it was possible that the Village of Arlington Heights could construct a CSO structure capable of adding as much as 400 cubic feet per second (cfs) of flow to Weller Creek and increasing Mount Prospect floodplains without obtaining a permit from the Federal Emergency Management Agency (FEMA). FEMA is the federal agency usually responsible for monitoring floodways and floodplains. Melcy Pond commented that the construction of Arlington Heights' CSO structure was an unusual project. Arlington Heights did obtain the MWRDGC and IEPA permits necessary to build the structure. However, they did not submit their plans for review to FEMA or the Village of Mount Prospect so that the long-term environmental impacts could be considered.

Scott Davis suggested that Arlington Heights and the MWRDGC could be tapped as possible funding sources to help reconstruct creek banks destabilized by their additional flows. Public Works Director Andler stated that it is the Village's intent to investigate that possibility.

Chairman DeVito asked for clarification about the operation of CSO structures. Public Works Director Andler explained that the MWRDGC Tunnel and Reservoir Project (TARP), or "Deep Tunnel" is designed to drain their sewer interceptor system. Their CSO at Central Road & Weller Creek is installed on their combined sewer interceptor system. The "Deep Tunnel" drains the combined interceptor system until it is volumetrically half full. Once the "Deep Tunnel" is half full, it no longer accepts flows from the combined interceptors. If the combined interceptor system becomes surcharged, it discharges overflows at the CSO structures. The other half of TARP, the "Reservoir", currently under construction near O'Hare, is scheduled to come on line in 1997. The reservoir will also drain the combined interceptor system and should reduce the number of CSO discharges even further.

Scott Davis noted that the draft version did not specifically identify what agency is responsible for maintenance of the creek. Melcy Pond responded that the omission would be corrected in the final draft. Ms. Pond stated that the Village has the authority to maintain the creek. Much of this authority was assumed when the Village took over the Mount Prospect portion of the Weller Creek Drainage District in 1972. Mount Prospect's authority to maintain the waterway even extends through the areas where private property owners' lots extend to the centerline of the creek. She noted that ownership issues along the creek are extremely complex and establishing Village's authority to maintain the channel required extensive legal research. Public Works Director Andler added that the Village Attorney recommends pursuing grants of easements where property owners own to the centerline of the creek.

Chairman DeVito asked if the property at Route 83 and Weller Creek and the property near 208 W. Hiawatha would require sheet piling or other hard engineering solutions. Chairman DeVito noted that both of these properties have homes within very close proximity to the creek. She asked whether or not these specific properties should be segregated from the rest of the Reach and receive a higher priority. Melcy Pond commented that RUST's evaluation of the banks has not identified these properties as higher priorities than the rest of the reach. However, she stated that RUST staff would review the videotape and re-evaluate these properties.

Scott Davis asked if hard engineering solutions were used, like the monoslab treatments installed east of School Street, would large trees installed along the tops of the banks be able to remain? Paul Schwartz stated that the installation of monoslabs would probably require the removal of trees at the tops of the banks. Mr. Schwartz explained that the monoslabs are positioned along the platted centerline of the creek and the banks are re-sloped to provide a proper foundation for continuing monoslab installation up the slope. Typically, re-sloping the banks necessitates removal of trees and shrubs along the tops of the banks.

Scott Davis commented that RUST should be more explicit about the number of trees that will have to be removed in order to install the proposed solutions. Mr. Davis relayed his concern that many residents may not realize the extent to which trees will have to be pruned or removed. Specifically, Mr. Davis stated that when residents here terms like "50% ambient sunlight", they are led to believe that only 50% of the trees will have to be removed or thinned. In reality, some properties with severely undercut trees or high concentrations of invasive trees, may have all of their trees removed. Paul Schwartz responded that RUST was not attempting to be vague or elusive on the subject of tree removals and pruning. The extent of tree removals has to be

determined on a site specific basis. The number of trees removed near each property will be determined by the specific conditions at that site including number, type, and position of existing trees as well as the bank stabilization requirements at that site. However, he agreed that the final draft of the RUST report will include a more extensive discussion of the environmental conditions necessary to stabilize banks using bio-engineering techniques as well as more information about tree removal criteria.

Public Works Director Andler requested that RUST include a typical cross-section of a bio-engineering solution in the final report.

Chairman DeVito asked what steps the Village was going to take to return the creek to it's platted centerline in those areas where it is presently outside the established easements. Public Works Director Andler suggested that the logical bank stabilization solution in those areas would incorporate a redirection of the creek towards it's true centerline.

Chairman DeVito also asked RUST to include some type of comparison to show the implementation cost differences between using bio-engineering solutions and hard engineering solutions like monoslab treatments. Ms. DeVito suggested, and Mr. Davis concurred, that this type of information could help residents rationalize tree removals.

Scott Davis requested that RUST compare the maintenance costs associated with bio-engineering techniques to those for more hard engineering solutions. Mr. Davis proposed that maintenance costs would be higher for bio-engineering than for hard engineering. Paul Schwartz agreed that bio-engineering maintenance costs are higher than for techniques like monoslab installations. He added that he did attempt to address this topic in a later section of the report and could expand upon it if necessary.

Scott Davis noted that the RUST report suggested that a stated goal of the Village was to find a "natural" solution to the bank stabilization problem. Mr. Davis stated that he was unaware that this was an objective of this group. Public Works Director Andler concurred and instructed RUST to remove the statement from the report.

Public Works Director Andler informed the Committee that the IEPA has acknowledged receipt of the Village's grant application. He added that the IEPA reports receiving 37 other applications worth a total of $15 million. The Village's proposed project alone was estimated at over $1 million. Award announcements will be made after December.

Chairman DeVito expressed concern about the idea of creating a special service area to fund the bank stabilization project. Specifically, Ms. DeVito stated her concerns that such a plan would force property owners who live here today to pay for creek repairs that would have been less costly years ago when the damage was less severe. Public Works Director Andler commented that a special service area might be expanded to include the entire Weller Creek drainage area and could even include homes in Arlington Heights.

Scott Davis commented that the Village should express it's concern to Arlington Heights about the effect that their addition CSO discharges will have on Mount Prospect homes in the interim years between construction of their discharge structure and final completion of the MWRDGC reservoir at O'Hare.

Public Works Director Andler requested that RUST include a notation about MWRDGC ownership of a parcel of land in the Reach D exhibit. He also requested that RUST number exhibits.

Public Works Director Andler also requested that RUST prioritize areas within Reach A and separate costs for sheet piling, School Street to Emerson Street, the Emerson Street bridge, Emerson Street to Main Street, and Main Street to Route 83.

Chairman DeVito asked when Route 83 construction will begin? Public Works Director Andler responded that IDOT has not yet budgeted Route 83 improvements north of Golf Road.

Chairman DeVito asked if the MWRDGC had performed any analytical tests on Weller Creek waters near their discharge structure. Deputy Public Works Director Dorsey responded that he had met with the MWRDGC to discuss their discharge flows from the Central Road structure. The MWRDGC freely admits that there have been discharges from the structure. In fact, there had been at least two (2) during the recent heavy May rains. These discharges contain some sanitary waste. In the past, before TARP, discharges from the structure were much more frequent. As a result, the MWRDGC is confident that dissolved organics exist in the creek bed.

Testing the waters for a continuous, sanitary discharge would be a hit or miss proposition. Such a discharge could only occur through an illegal connection to IDOT's storm sewer system. The MWRDGC can only discharge to the creek when it's CSO gates are open. An on-site visit with an MWRDGC representative confirmed that the gates were indeed closed. The gates only open during heavy rain events when the District is preparing to discharge to the creek. The gates are electrically operated by personnel at the Kirie Plant in Des Plaines. A visual inspection of the waters flowing from the IDOT storm sewer yielded no indication that sanitary wastes were being discharged at the time of our visit.

Chairman DeVito commented that during her meeting with MWRDGC Commissioner Nancy Drew Sheahan, Ms. Sheahan indicated that the Clean Water Act makes sanitary discharges to streams and waterways illegal. Deputy Public Director Dorsey responded that the MWRDGC is legally permitted to operate the CSO structure at Central Road and discharge to Weller Creek. The Clean Water Act limits CSO discharges but does not strictly prohibit them. Melcy Pond suggested that Ms. Sheahan may not have realized the circumstances surrounding the Central Road CSO and may have made her comments out of context.

Deputy Public Works Director Dorsey explained that the MWRDGC operates it's CSOs on the theory that, initially, heavy rains are drained from the interceptor system to the TARP system. This initial draining to the "Deep Tunnel" essentially flushes most sanitary waste into storage where it remains until storm flows subside and the waste can be pumped out and treated. When the CSOs discharge to streams, most of the effluent is comprised of clear water caused by the storm event.

Scott Davis asked if the costs of removing potentially contaminated creek bed and bank soils had been incorporated into RUST's cost estimates. Paul Schwartz confirmed that all disposal costs were calculated using Special Waste rates.

OTHER BUSINESS

Public Works Director Andler advised the Committee that RUST and Village staff plan to make a presentation to the Village Board at the Committee of the Whole meeting scheduled for Tuesday, June 25, 1996 at 7:30 PM. Mr. Andler invited all Ad Hoc Committee members to attend the meeting and suggested that comments from Committee members, either individually or collectively, would be appropriate.

NEXT MEETING

No new meetings were scheduled.

ADJOURNMENT

There being no further business, the meeting was adjourned at 9:30 PM.

Respectfully Submitted,

Sean P. Dorsey
Deputy Director of Public Works

EXHIBIT C

MINUTES AND EXHIBITS
PRESENTED AT THE MEETING
OF THE COMMITTEE
OF THE WHOLE

MINUTES
COMMITTEE OF THE WHOLE
DECEMBER 12, 1995

I. CALL TO ORDER

Mayor Gerald Farley called the meeting to order at 7:35 p.m. Present at the meeting were: Mayor Gerald L. Farley; Trustees George Clowes, Richard Hendricks, Michaele Skowron, and Irvana Wilks. Absent from the meeting were: Trustees Timothy Corcoran and Paul Hoefert. Also present were: Village Manager Michael Janonis, Assistant Village Manager David Strahl, Public Works Director Glen Andler, Deputy Public Works Director Sean Dorsey and Communications Administrator Cheryl Pasalic.

II. MINUTES

Acceptance of the Minutes of November 28, 1995. Motion made by Trustee Clowes and Seconded by Trustee Skowron to approve the Minutes. Trustees Clowes and Wilks requested some modifications to the Minutes and requested the Minutes be resubmitted at the next meeting for approval.

III. CITIZENS TO BE HEARD

None.

IV. WELLER CREEK PROJECT PROGRESS REPORT

Public Works Director Glen Andler provided an overview of the RUST findings to date. He stated that the majority of the contract had been completed except for the hydraulic calculations needed to determine proper capacity and to determine if the capacity would affect any proposed solutions. He stated there had been three meetings with the Weller Creek Citizens' Ad Hoc Committee to date. Among the activities of the Committee was a videotaped walk of the Creek from end to end. This walk took place in the Creek bed. It was important to perform this type of review to determine how badly the Creek banks really were because the most effective way to view the problems is from the ground-up.

Paul Schwartz, Landscape Engineer for RUST Engineering, provided an overview of the Creek status through the use of the video taken from the Creek bed. He stated the Creek is approximately 2.2 miles in total length and the Creek had been broken into four general regions. Generally, the problems with the Creek are a result of severe erosion. In order to resolve some of these problems, accessibility to the Creek itself has to be resolved. He stated the tree canopy is quite dense and it does not allow for very much light to get to the Creek banks for grasses to grow. Grasses have a much better soil holding capacity than trees. The worst section of the four is the School to Elmhurst section as depicted in the videotape. He also provided a general overview of some possible solutions which could be used on the various Creek sections based on the conditions unique to each section.

Melcy Pond, Project Engineer for RUST, spoke. She felt that the recommendations that RUST is putting forward will focus on the most severe section and include estimated costs. Approximately $350,000 for reconstruction of the Emerson Street bridge; $250,000 for the Main Street area and pedestrian bridge; approximately $1 million for slope improvements and bio-engineering amounting to approximately $750,000; for a total of approximately $2.5 million for the School to Elmhurst section.

Grace DeVito, Chairperson for the Weller Creek Citizens' Ad Hoc Committee, spoke. She read a letter to the Board providing a general overview of the Committee discussions to date and the concerns about the proposed solutions. Among the items of concern are the responsibility for maintenance and the fate of the trees located in the Creek. She also stated that it was important that the residents be provided some type of guidance in terms of which plantings they should consider to assist in maintaining the repaired slope. Finally, the Committee had requested a conceptual drawing of an overall solution in which they could readily visualize what the improvements may entail. A need for a firm time frame to begin solutions was requested by the Committee once the final report is prepared.

General comments of the Village Board members followed in which questions were raised concerning how much the Emerson Street bridge may have to be raised to accommodate the improved Creek flow. The different types of materials used to anchor the Creek bank were also discussed.

Public Works Director Glen Andler stated that he hoped that the remaining contract items would be concluded by the end of February. They are currently working on some final determinations relative to ownership of the Creek and adjoining properties.

Village Manager Michael Janonis indicated that this item was provided to the Village Board for information purposes only. Once the final report is concluded, it is expected that another update will take place and at that time the Village Board will discuss possible financing options relative to cost estimates and proposed solutions.

VI. DISCUSSION REGARDING MODEL TELECOMMUNICATIONS ORDINANCE

Communications Administrator Cheryl Pasalic provided a general overview of what the history behind the development of the Model Telecommunications Ordinance (MTO) and provided general information for the reasons that many other communities also felt that such a model Ordinance would be beneficial to them. Mount Prospect has encountered severe limitations of its right-of-way space due to the numerous demands for the use of this space and the various conflicts between different utilities for this space. The MTO provides a framework to deal with the different providers within the right-of-way. Ms. Pasalic provided a general overview of the process for review by staff at the time a permit request is submitted. The MTO will provide a general framework for any future agreements with providers or pass-through providers which will streamline the review process itself.

General comments by the Village Board members included the following items:

Some discussion about the inter-relationship of IDOT permits for work in the right-of-way compared to Village responsibility of controlling the right-of-way. As part of the implementation of this Ordinance, the Village has contacted IDOT and both IDOT and the Village have come to an agreement on enforcement of Village Codes in IDOT's right-of-way. The proposed fees which would be included with the Ordinance would be set at a level which would cover the Village expenses for Plan review and inspections. There will still be a need for a separate Franchise Agreement with each provider, however, the Franchise Agreement will be relatively basic because the MTO will have addressed a majority of items which would typically be contained in a Franchise Agreement. It was also discussed that a Model Franchise Agreement is under development by representatives of the Northwest Municipal Conference and once developed should assist communities in drafting appropriate Franchise documents. Some Board members recommended a coordination effort be undertaken so that a centralized agency would be responsible for the provisions of the MTO; therefore, each community would not be responsible for all components outlined in the Ordinance.

WELLER CREEK PROJECT AD HOC COMMITTEE

Citizens Working with the Village of Mount Prospect for Creek Improvements

December 12, 1995

Mayor Gerald Farley
Committee of the Whole
Village of Mount Prospect
100 South Emerson Street
Mount Prospect, Illinois 60056

Dear Mayor Farley:

On behalf of the Weller Creek Ad Hoc Committee, I want to thank the Committee of the Whole for its' support of the Weller Creek Project. We are impressed with the cooperation from the Village employees and Rust Engineering, as we continue to research creek erosion and bank stabilization as it pertains to Weller Creek. A special note of thanks goes to Trustee Skowron, who has participaed in our discussions and in the Creek walk, seeing frist hand the conditions along the Creek.

We realize now, more than ever, how important it is to address the many problems found along the creek, as soon as possible. We know that Creek improvements will greatly enhance the entire neighborhood, and will have a positive effect on property values of residents who live along the Creek.

We have participated in three Rust presentations, and have exchanged many thoughts and concerns about this Creek that runs through our backyards. When we went on the "Creek walk", Melcy Pond and Paul Schwartz explained many of the problems existing in the Creek from the bottom, up. We have learned much about the causes of erosion and methods needed for bank stabilization. The members of our Committee don't always agree on the assorted details, but we know that this work needs desperately to be done. We have expressed our many concerns to Rust, and they continue to listen and recommend what we feel are good, solid solutions to the problems presented here.

There are still some areas that need to be pursued:

1. The continuing potential of sewage flowing into the Creek from Arlington Heights and open MWRD outflows is still a cause for concern. This is a residential neighborhood. Children are drawn to water, and try as we might to prevent this, it will always happen. As long as sewage flows into the Creek, we have the dangers associated with contaminated water, and will have the odors that are part and parcel to it. We would like the Village and Rust to continue to pursue the "clean water" emphasis that we have been aiming for.

2. We would like to see firmly established guidelines for maintenance responsibility along the Creek. Weller Creek has been neglected for years for a variety of reasons.

We would like firm commitments as to who owns what, and who is responsible for maintenance along the Creek, before and after the bank stabilization project takes place. We realize that Creek stabilization will take place in stages, and probably over a period of a couple of years. In the meantime, we would like to encourage some basic clean-up of the different areas that are littered with debris.

3. The topic that has evoked possibly the most response and conversation is the fate of all the trees along Weller Creek. This continues to be a cause of concern among Committee members and, frankly, we are not in total agreement here. Although we do not like the idea of loosing a large amount of trees, we understand the reason for this to happen. The trees have been neglected for so long that they are in very poor condition. We loose 2 or 3 every time there is a healthy rain. The roots of many are exposed to the point where the tree growth is permanently damaged. Many are split down the middle, many are dead. Many trees are in the direct path of the water flow, causing erosion directly downstream. Most importantly, for any type of bank stabilization grasses to grow, we must have what has been characterized as "50% sunlight". Without it, any work we do to stabilize the banks will not succeed.

We would like a firm commitment from the Village on the percentage of trees / shrubbery to be replaced by the Village as the bank stabilization progresses. We would then request guidelines for residents as to what plantings they can add to their individual properties, beyond what the Village puts in. The guidelines should include trees / shrubs whose heights and density will allow adequate sunlight to penetrate, and varieties friendly to Creek habitats that will grow and attract the wildlife that is so plentiful here. For instance, Rust has suggested that more dense plantings should be on the North bank, and lower, more open plantings should be on the South bank to allow for light penetration.

4. We believe that it would be helpful, not only to us, but to other residents as well, to see a conceptual drawing of what we can expect the Creek to look like after the work is completed.

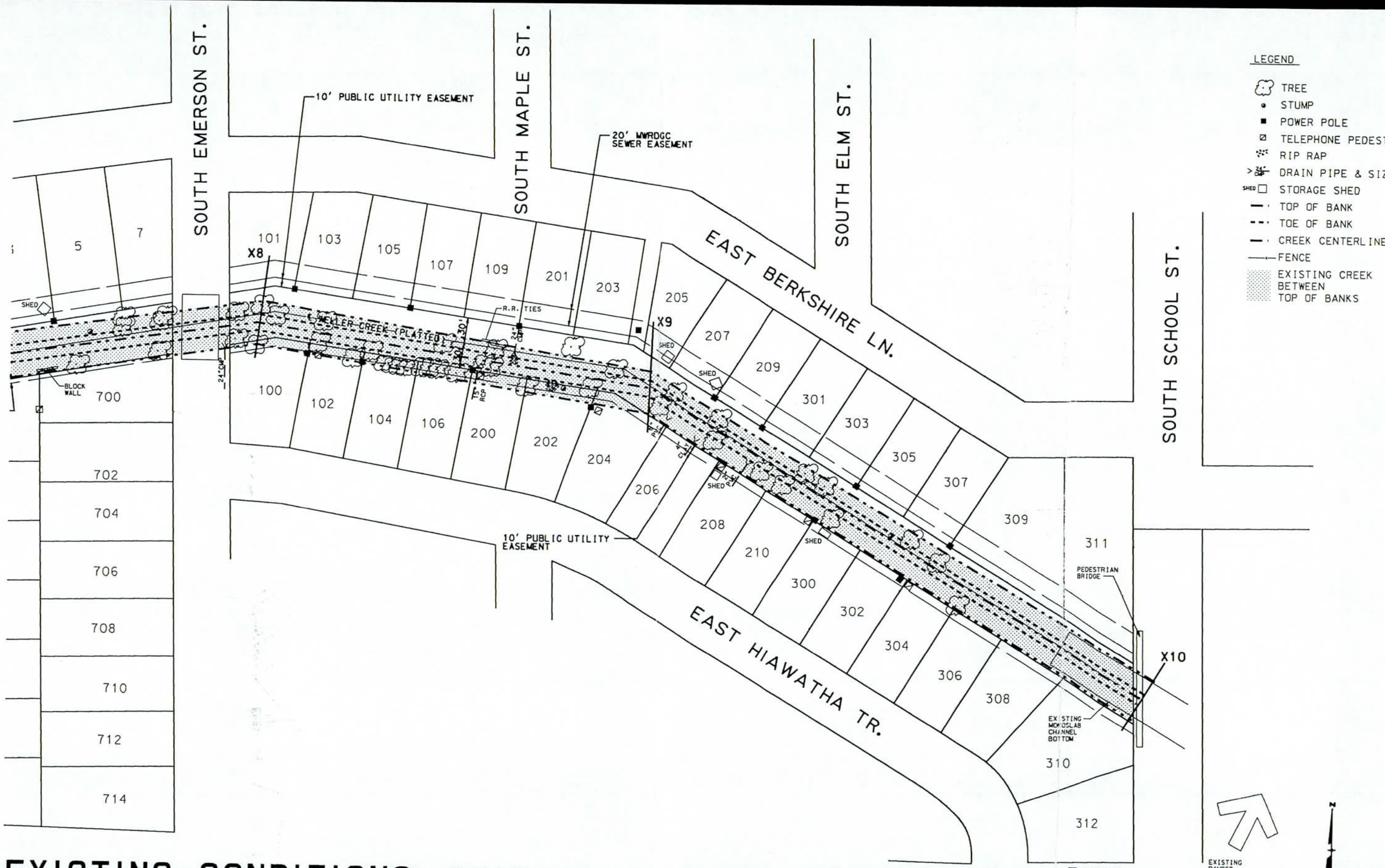
5. Some properties have more serious problems than others. For instance, there are several homes which are 15 feet or closer to the top of the creek bank, and therefore need immediate attention. We would like the Village to establish a firm timeline for when we might expect work to be done in the problem different areas.

We are very encouraged by all the work that has been done to get us to this point. We appreciate the opportunity to be a sounding board and an avenue of information to other residents. We know that Weller Creek can be a beautiful asset to this community, but that the path to this goal will require change and sacrifice. We are on the right path and we believe it will be worth it. Let's keep working with this goal in mind.

Thank you.

Sincerely,

Grace DeVito
Chairperson

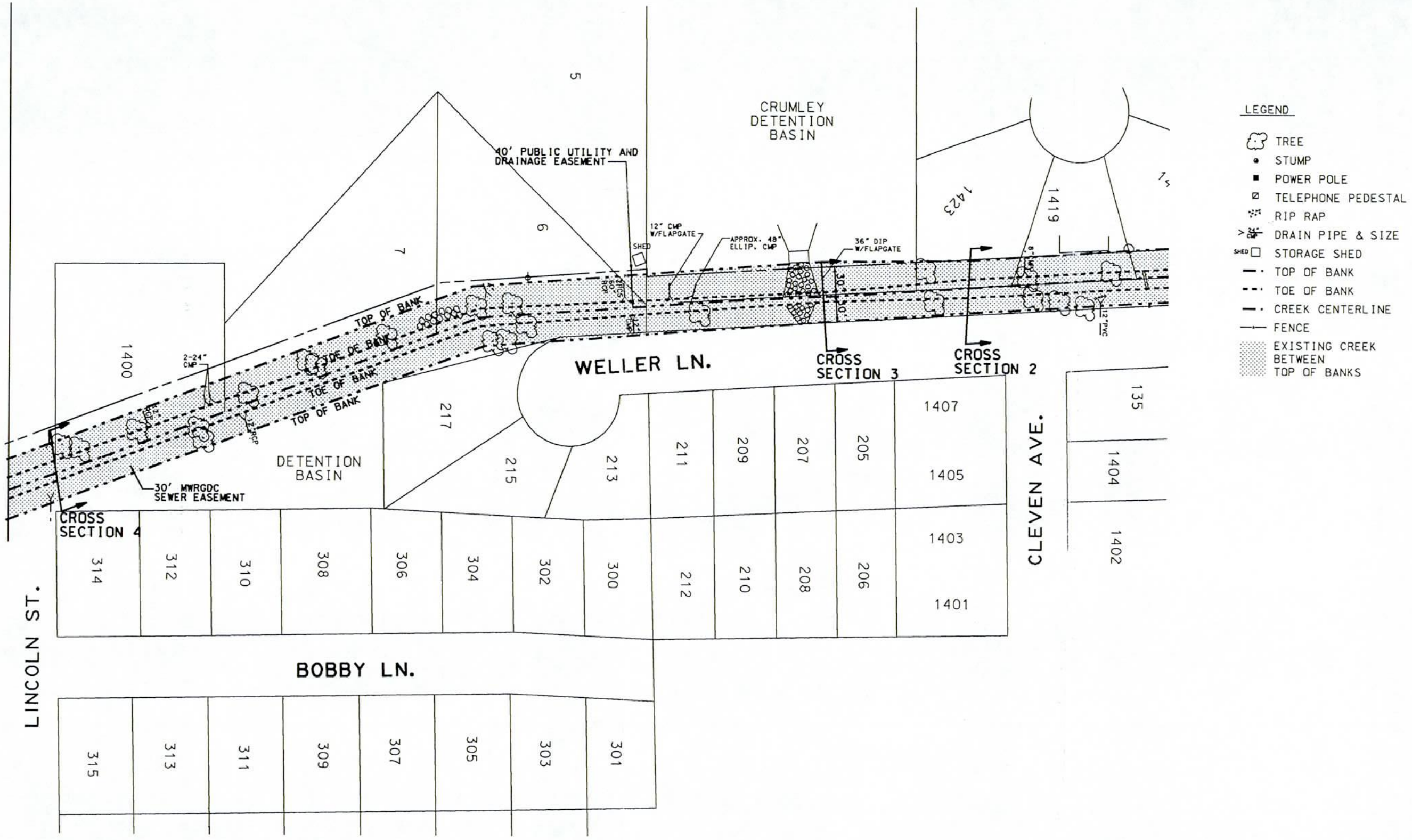


EXISTING CONDITIONS REACH A - EMERSON TO SCHOOL
WELLER CREEK STREAMBANK STABILIZATION

VILLAGE OF MT. PROSPECT, ILLINOIS

FIGURE C-1A

RUST ENVIRONMENT & INFRASTRUCTURE



LEGEND

- TREE
- STUMP
- POWER POLE
- TELEPHONE PEDESTAL
- RIP RAP
- DRAIN PIPE & SIZE
- SHED STORAGE SHED
- TOP OF BANK
- TOE OF BANK
- CREEK CENTERLINE
- FENCE
- EXISTING CREEK BETWEEN TOP OF BANKS

EXISTING CONDITIONS REACH D - CLEVEN TO LINCOLN
WELLER CREEK STREAMBANK STABILIZATION

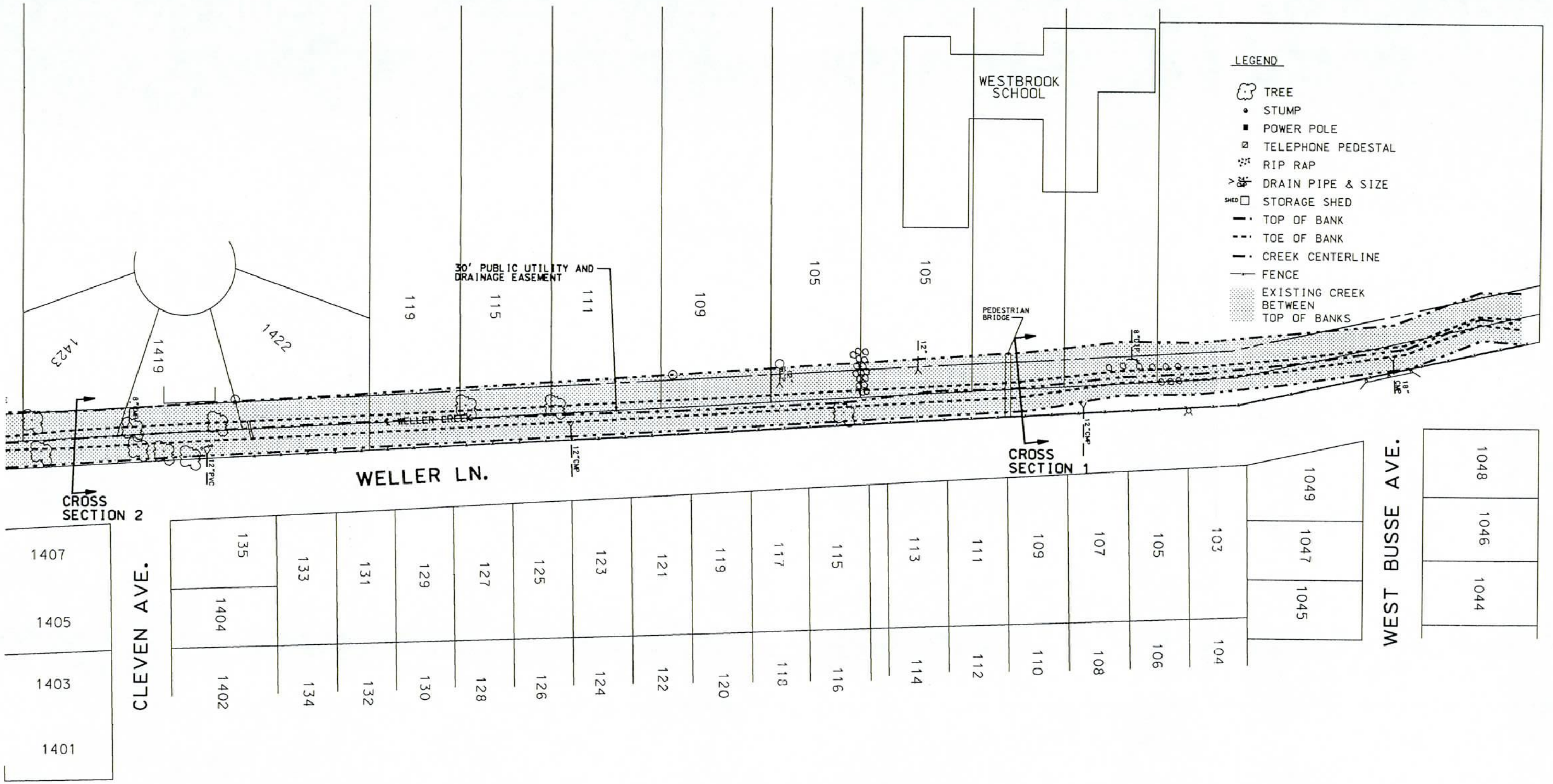
VILLAGE OF MT. PROSPECT, ILLINOIS

FIGURE C-1C

N

0' 25' 50' 100'

RUST ENVIRONMENT & INFRASTRUCTURE



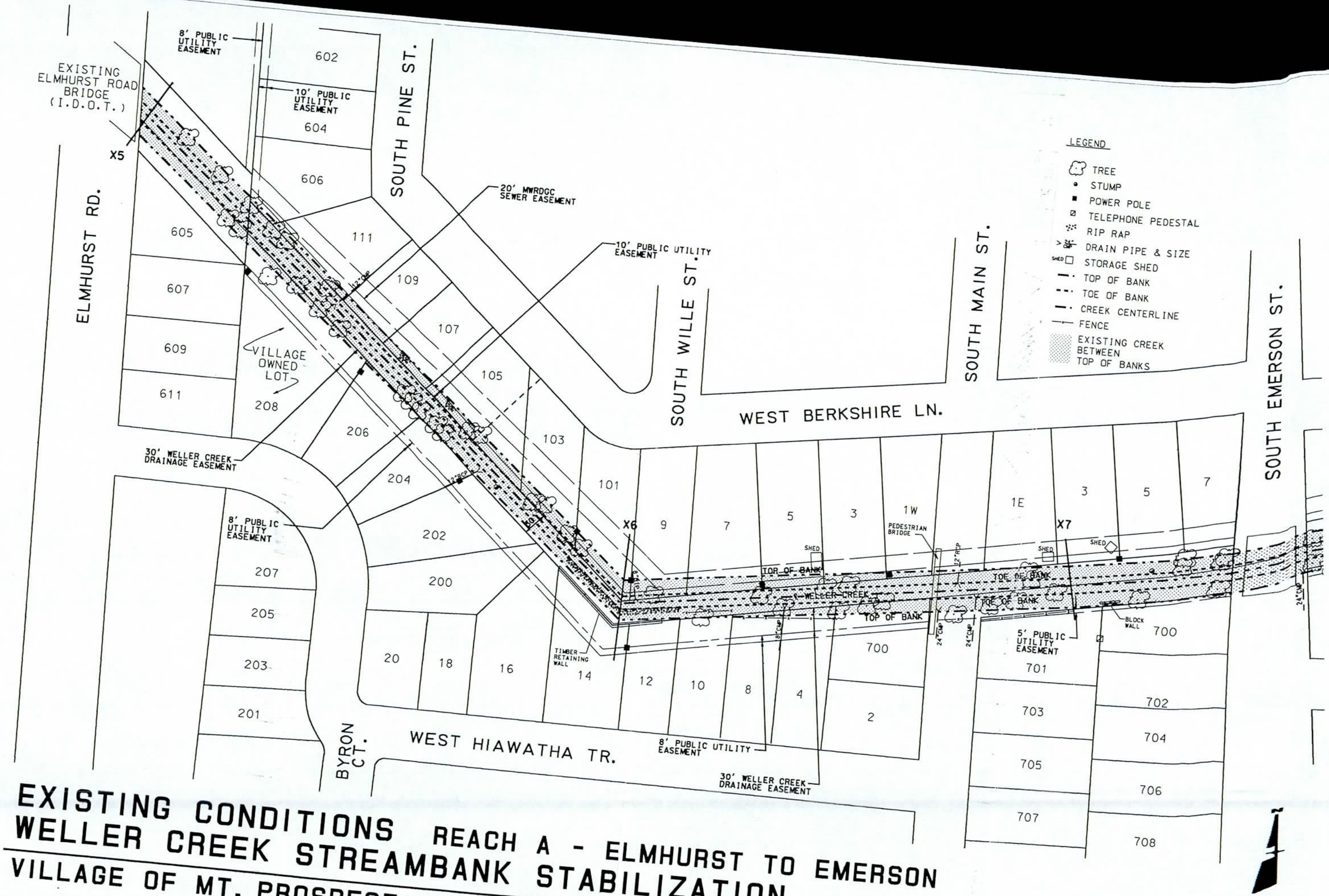
EXISTING CONDITIONS REACH D - WEST CENTRAL TO CLEVEN
WELLER CREEK STREAMBANK STABILIZATION

VILLAGE OF MT. PROSPECT, ILLINOIS

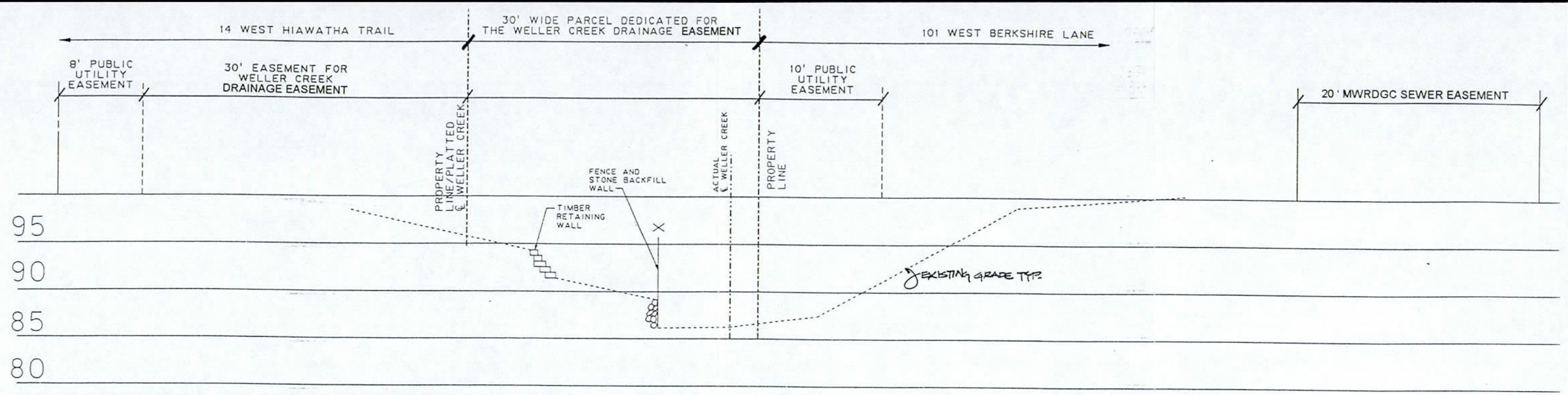
FIGURE C-1D

0' 25' 50' 100'

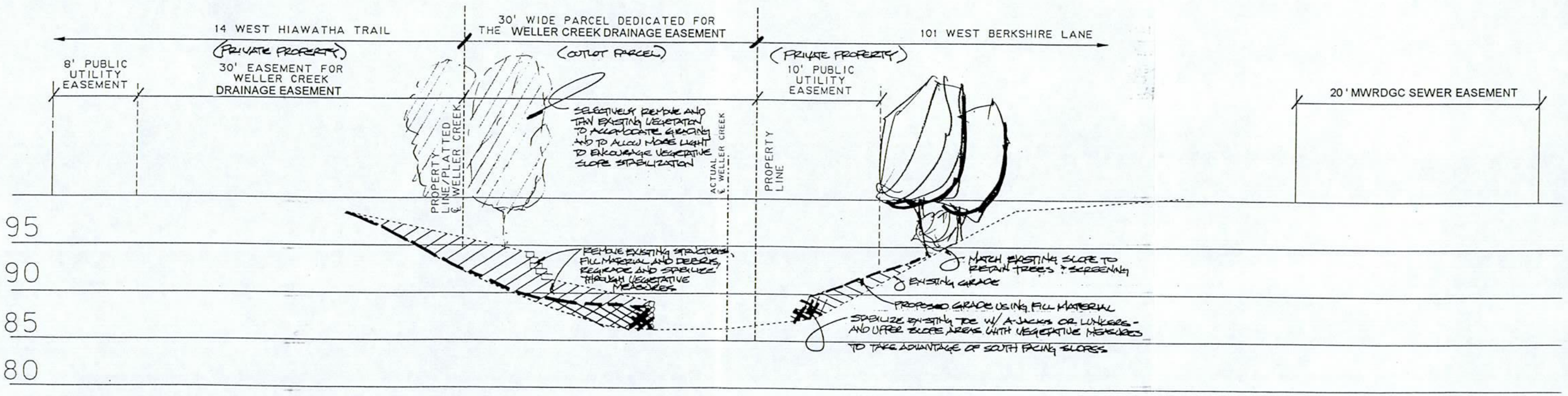
RUST ENVIRONMENT & INFRASTRUCTURE



EXISTING CONDITIONS REACH A - ELMHURST TO EMERSON
WELLER CREEK STREAMBANK STABILIZATION
VILLAGE OF MT. PROSPECT, ILLINOIS



EXISTING CONDITIONS
CROSS SECTION LOCATION 6

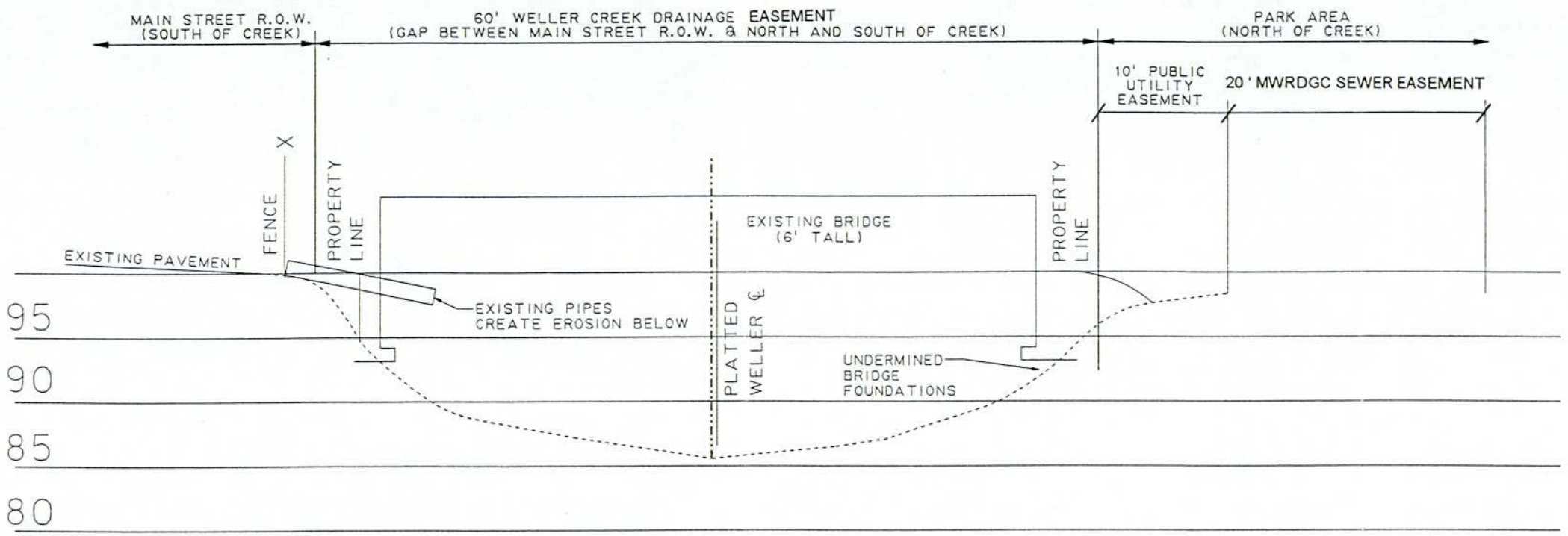


PROPOSED CONDITIONS
CROSS SECTION LOCATION 6

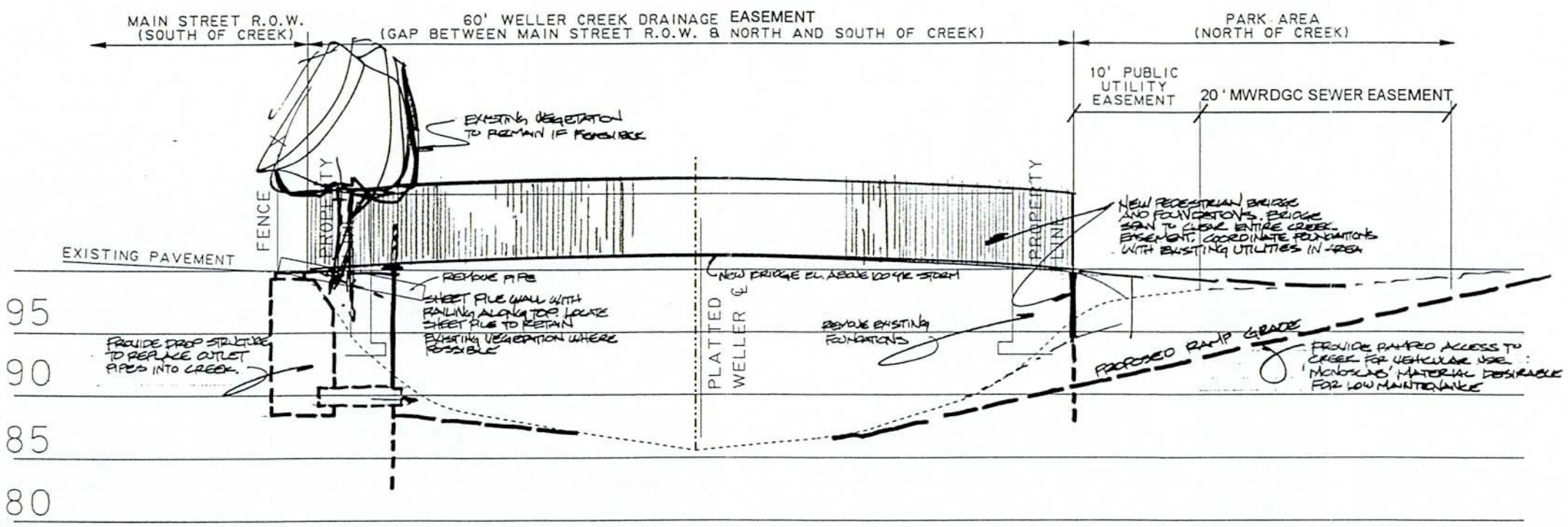
WELLER CREEK STREAMBANK STABILIZATION

VILLAGE OF MT. PROSPECT, ILLINOIS **FIGURE C-2A**

RUST ENVIRONMENT & INFRASTRUCTURE



EXISTING CONDITIONS
CROSS SECTION AT MAIN STREET R.O.W.

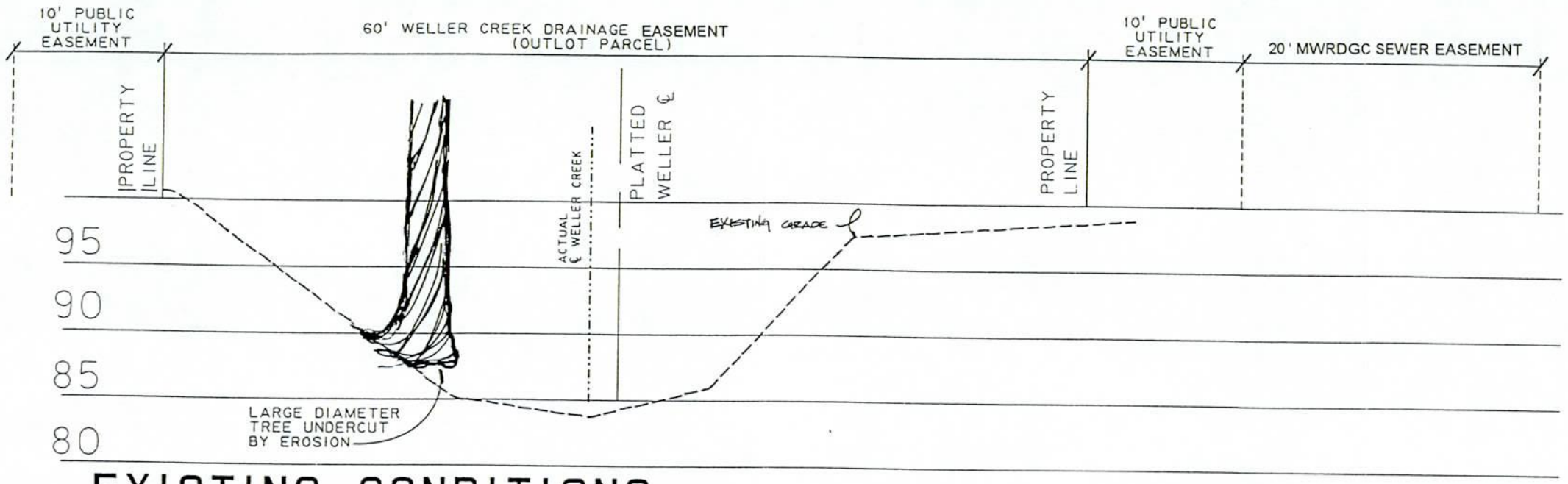


PROPOSED CONDITIONS
CROSS SECTION AT MAIN STREET R.O.W.

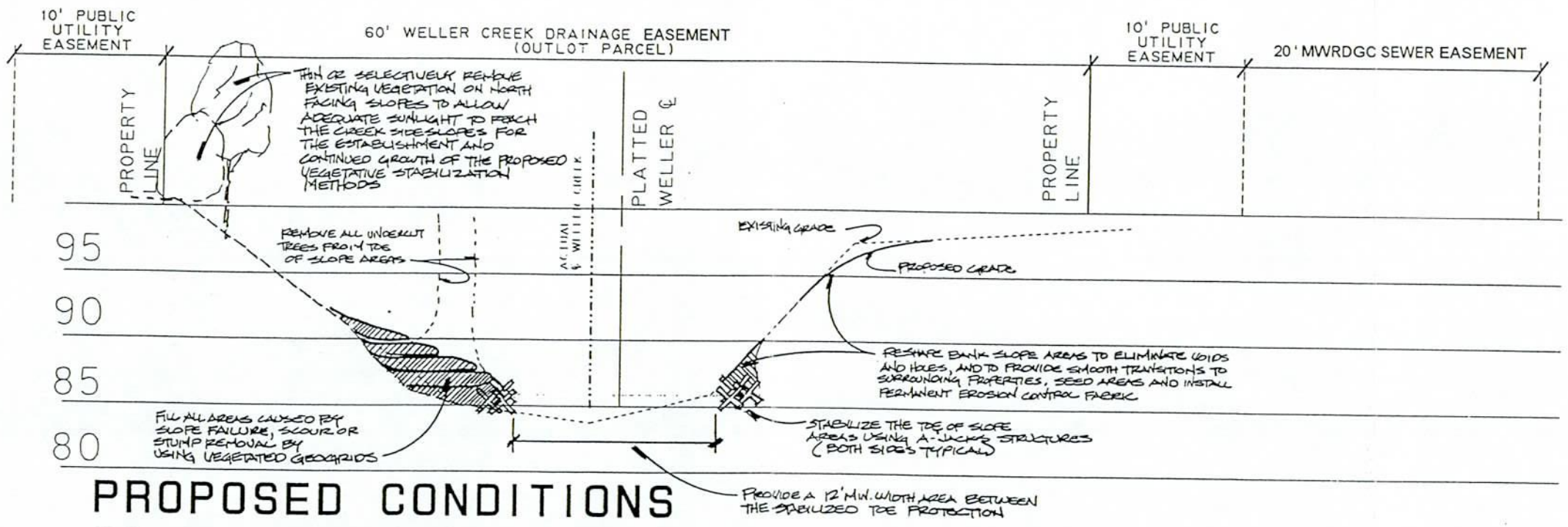
WELLER CREEK STREAMBANK STABILIZATION

VILLAGE OF MT. PROSPECT, ILLINOIS **FIGURE C-2B**

RUST ENVIRONMENT & INFRASTRUCTURE



EXISTING CONDITIONS
CROSS SECTION LOCATION 9

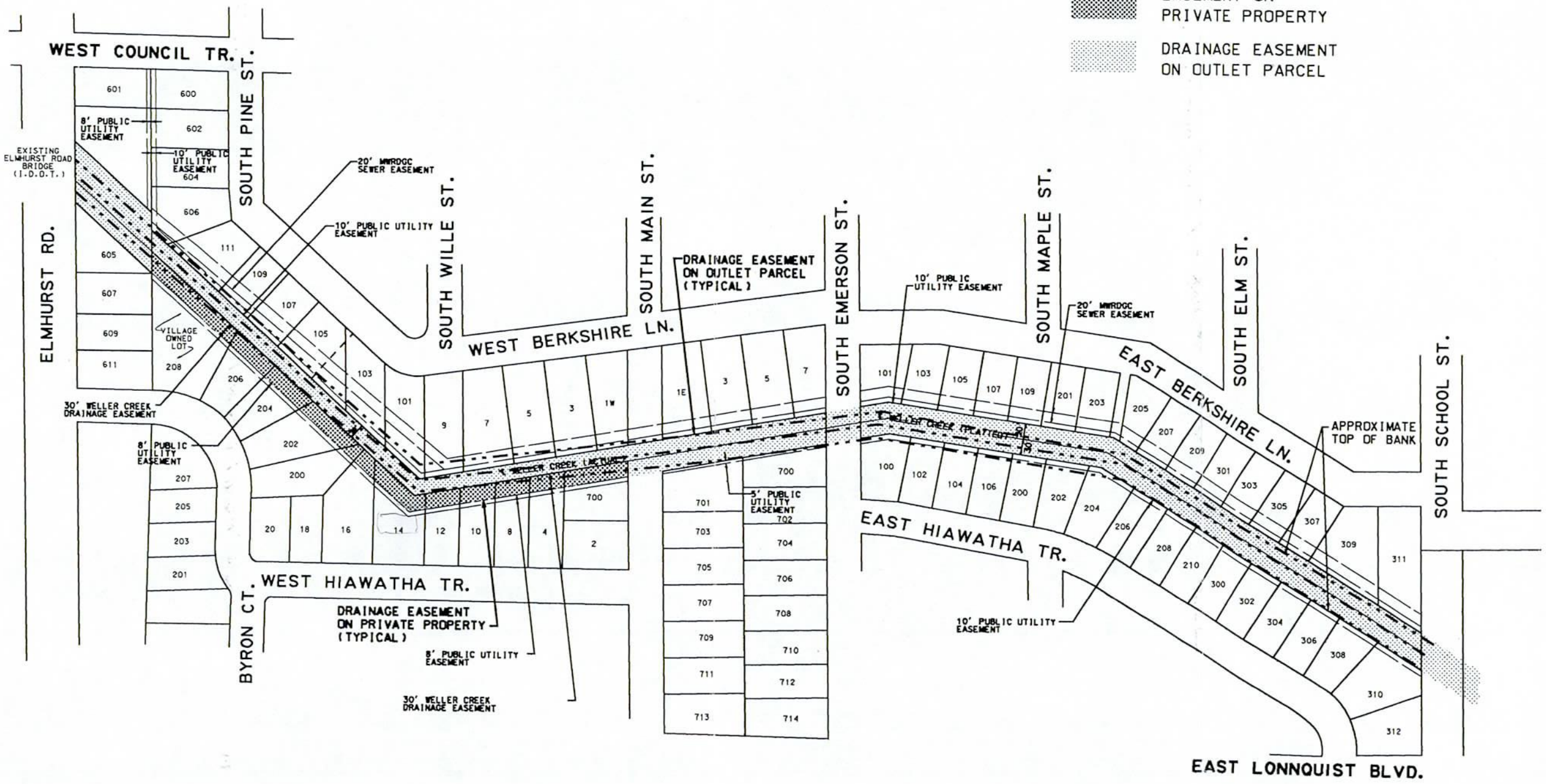


PROPOSED CONDITIONS
CROSS SECTION LOCATION 9

WELLER CREEK STREAMBANK STABILIZATION

VILLAGE OF MT. PROSPECT, ILLINOIS **FIGURE C-2C**

RUST ENVIRONMENT & INFRASTRUCTURE

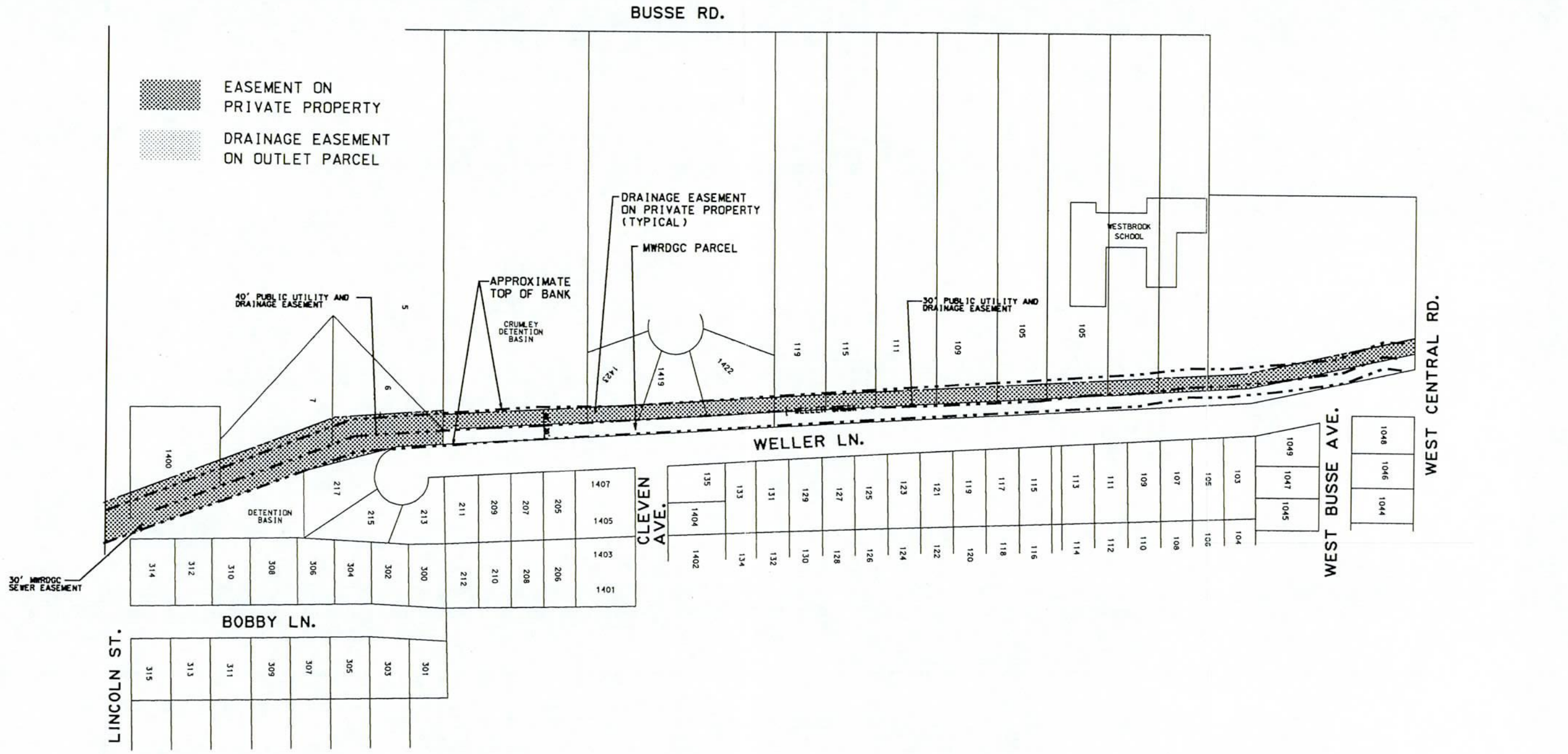


PROPERTY OWNERSHIP AND EASEMENTS - REACH A
WELLER CREEK STREAMBANK STABILIZATION

VILLAGE OF MT. PROSPECT, ILLINOIS

FIGURE C-3A

RUST ENVIRONMENT & INFRASTRUCTURE



PROPERTY OWNERSHIP AND EASEMENTS - REACH D
WELLER CREEK STREAMBANK STABILIZATION

VILLAGE OF MT. PROSPECT, ILLINOIS

FIGURE C-3B

0' 50' 100' 200'

RUST ENVIRONMENT & INFRASTRUCTURE

EXHIBIT D

IMPLEMENTATION COST ESTIMATES

SUMMARY OF IMPLEMENTATION COSTS

Weller Creek

Village of Mount Prospect, Illinois

Reach A	$2,709,900
Reach B	$769,900
Reach C	$309,600
Reach D	$616,700
TOTAL	$4,406,100

REACH A - ELMHURST ROAD TO SCHOOL STREET

COST ESTIMATE BY SUBREACH
Weller Creek
Village of Mount Prospect, Illinois

DESCRIPTION	UNIT	UNIT COST	QUANTITY	COST
School Street to Emerson Street				
- site preparation	l.s.	$29,460	1	$29,460
- A-jacks or lunkers with geogrid	l.f.	$110	1220	$134,200
- A-jacks with permanent blanket	l.f.	$65	980	$63,700
- bottom stabilization	l.s.	$382,450	1	$382,450
- revegetation	lot	$570	32	$18,240
Emerson Street to Main Street Area				
- site preparation	l.s.	$13,400	1	$13,400
- A-jacks or lunkers with geogrid	l.f.	$110	300	$33,000
- A-jacks with permanent blanket	l.f.	$65	200	$13,000
- bottom stabilization	l.s.	$176,500	1	$176,500
- revegetation	lot	$570	12	$6,840
- Emerson Street bridge replacement	l.s.	$355,000	1	$355,000
- Main Street pedestrian bridge replacement	l.s.	$60,000	1	$60,000
- sheet pile, railing, structure	l.s.	$130,000	1	$130,000
Main Street to Elmhurst Road				
- site preparation	l.s.	$32,140	1	$32,140
- A-jacks or lunkers with geogrid	l.f.	$110	1340	$147,400
- A-jacks with permanent blanket	l.f.	$65	1060	$68,900
- bottom stabilization	l.s.	$421,650	1	$421,650
- revegetation	lot	$570	26	$14,820
			subtotal	$2,100,700
		mobilization/demobilization	4%	$84,000
		engineering/legal/administration	10%	$210,100
		contingency	15%	$315,100
				$2,709,900

REACH B - SEE-GWUN AVENUE TO ELMHURST ROAD

PROJECT COST ESTIMATE
Weller Creek
Village of Mount Prospect, Illinois

DESCRIPTION	UNIT	UNIT COST	QUANTITY	COST
Site Preparation				
- tree removal	l.s.	$50,000	1	$50,000
- thinning and maintenance of vegetation	l.s.	$25,000	1	$25,000
Streambank Stabilization				
- A-jacks or lunkers with geogrid	l.f.	$110	3240	$356,400
- A-jacks with permanent blanket	l.f.	$65	2160	$140,400
Revegetation	l.s.	$25,000	1	$25,000
			subtotal	$596,800
		mobilization/demobilization	4%	$23,900
		engineering/legal/administration	10%	$59,700
		contingency	15%	$89,500
				$769,900

REACH C - LINCOLN STREET TO SEE-GWUN AVENUE

PROJECT COST ESTIMATE
Weller Creek
Village of Mount Prospect, Illinois

DESCRIPTION	UNIT	UNIT COST	QUANTITY	COST
Streambank Stabilization				
- fiber roll and vegetative stabilization	l.f.	$40	6000	$240,000
			subtotal	$240,000
		mobilization/demobilization	4%	$9,600
		engineering/legal/administration	10%	$24,000
		contingency	15%	$36,000
				$309,600

REACH D - CENTRAL ROAD TO LINCOLN STREET

PROJECT COST ESTIMATE
Weller Creek
Village of Mount Prospect, Illinois

DESCRIPTION	UNIT	UNIT COST	QUANTITY	COST
Site Preparation				
- tree removal	l.s.	$45,000	1	$45,000
- thinning and maintenance of vegetation	l.s.	$25,000	1	$25,000
Streambank Stabilization				
- A-jacks or lunkers with geogrid	l.f.	$110	2120	$233,200
- A-jacks with permanent blanket	l.f.	$65	2120	$137,800
- fiber roll or vegetation stabilization	l.f.	$35	1060	$37,100
			subtotal	$478,100
		mobilization/demobilization	4%	$19,100
		engineering/legal/administration	10%	$47,800
		contingency	15%	$71,700
				$616,700

EXHIBIT E

NONPOINT SOURCE POLLUTION CONTROL PROGRAM - SECTION 319 FINANCIAL ASSISTANCE

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

Application for Financial Assistance for 319 Nonpoint Source Pollution Control Projects

PROJECT PROPOSAL PREAMBLE

Applicant: VILLAGE OF MOUNT PROSPECT

Address: 1700 West Central Road, Mount Prospect, IL 60056

Telephone: (847 - 870 - 5640 Fax: (847 - 253 - 9377

Authorized Representative: Glen Andler

Title: Director of Public Works

Project Title: Streambank Stabilization - Weller Creek

Date Submitted: Arpil 26, 1996

Project Description: (Briefly describe the proposed project)

The Village of Mount Prospect is proposing to undertake a streambank stabilization project along 0.6 miles of Weller Creek using bioengineering techniques such as fiber roll, brush mattress, A-jacks, lunkers, vegetated georid, and live fascines. The project was designed with direct input from a citizens ad-hoc committee and is a continuation of previous stabilization projects.

This Agency is authorized to require this information under Illinois Compiled Statutes, 1992, Chapter 415, Section 5/4(k). Disclosure of this information is required. Failure to do so may prevent this form from being processed and could result in your request being denied. This form has been approved by the Forms Management Center.

Project Time Frame: 1996 - 1998

Project Execution/Expiration Dates: 1996 - 1998

Total Project Cost (100%) $ 2,253,000

Federal Funding (60 %) $ 1,351,800

State/Local Funding (40 %) $ 901,200

Sources of State / Local Funding and Amounts:

Source	Amount($)
Village of Mount Prospect	$ 901,200

Submit To:

Illinois Environmental Protection Agency
Bureau of Water, Planning Section
2200 Churchill Rd., P.O. Box 19276
Springfield, IL 62794-9276

217/782-3362

PROJECT COST SUMMARY

PART I - GENERAL

1. Title of Project	Streambank Stabilization - Weller Creek	2. Agreement Number	
3. Recipient Name	VILLAGE OF MOUNT PROSPECT	4. Execution Date	
5. Recipient Address	1700 Central Road Mount Prospect, IL 60056	6. Agreement Period	

PART II - COST SUMMARY

7. Direct Labor *(Specify labor categories)*	Estimated Hours	Hourly Rate	Estimated Cost	Totals
Site Preparation Crew	1433	$ 25.00	$ 35,833	
Administration Staff	139	15.00	2,083	
Direct Labor Total :				$ 37,916

8. Indirect Costs *(Specify indirect cost pools)*	Rate	Cost Pool	Estimated Cost	
Site Perparation Crew	1.4	$ 35,833	$ 50,167	
Administration Staff	1.4	2,083	2,917	
Indirect Costs Total :				$ 53,084

9. Other Direct Costs				
a. Travel			Estimated Cost	
(1) Transportation			$	
(2) Per Diem			$	
Travel Subtotal :			$	
b. Equip, Materials, Supplies *(Specify categories)*	QTY	Cost	Estimated Cost	
		$	$	
Equipment Subtotal :			$	
c. Subcontracts			Estimated Cost	
Construction Contractor			$ 1,992,000	
Construction Observation			170,000	
Subcontracts Subtotal :			$ 2,162,000	
d. Other *(Specify categories)*			Estimated Cost	
			$	
Other Subtotal :			$	
Other Direct Costs Total :				$ 2,162,000

10. Total *(Items 7 thru 9)*		$ 2,253,000
11. Assistance Amount	(60 % of Total)	$ 1,351,800
12. Recipient Share	(40 % of Total)	$ 901,200

This Agency is authorized to require this information under Illinois Compiled Statutes, 1992, Chapter 415, Section 5/14(h). Disclosure of this information is required. Failure to do so may prevent this form from being processed and could result in your request being denied. This form has been approved by the Forms Management Center.

IL 532-2235

IDC 635 Jul-93

PART III - AUDIT

Recipients annually receiving $25,000.00 or more in federal funds from the IEPA must comply with the audit provisions of the Single Audit Act in accordance with Office of Management and Budget (OMB) Circular A-128 or Circular 133, whichever is applicable. Funded recipients must submit to the IEPA no less frequently than every two years, an independent audit report covering the award prepared in accordance with the provisions of the relevant OMB Circular.

PART IV - CERTIFICATIONS

13. RECIPIENT

This proposal is submitted for use in connection with and in response to (1) IEPA Section 19 Financial Assistance Program This is to certify to the best of my knowledge and belief that the cost and pricing data summarized herein are complete, current, and accurate as of (2) _____ and that a financial management capability exists to fully and accurately account for the financial transactions under this project. I further certify that I understand that the subagreement price may be subject to downward renegotiation and/or recoupment where the above cost and pricing data have been determined, as a result of audit, not to have been complete, current and accurate as of the date above.

(3) April 25, 1996
DATE OF EXECUTION

SIGNATURE OF RECIPIENT

Director of Public Works
TITLE OF RECIPIENT

14. IEPA REVIEWER

DATE OF REVIEW

SIGNATURE OF REVIEWER

TITLE OF REVIEWER

SECTION 319 PERMIT APPLICATION
STREAMBANK STABILIZATION - WELLER CREEK
MOUNT PROSPECT, ILLINOIS

I. PROBLEM STATEMENT

Weller Creek is severely eroding along 3,000 feet of its channel length. Increased runoff due to urbanization of the watershed and the invasion of streambanks by vegetation unsuitable for bank stabilization have been the main causes for the erosion. Active erosion of the banks during seasonal stream flows and more severe instances of slope failure during flood events result in significant sediment runoff. Absence of quality riparian vegetation provides little to no benefit for filtering surface runoff from the watershed to the channel.

2. PROJECT DESCRIPTION AND PURPOSE

The objective of this project is to improve the water quality of Weller Creek and its receiving waters through the repair and prevention of bank erosion and the establishment of native vegetation buffers along the stream corridor. Environmentally sound bioengineering methods, such as fiber roall, brush mattress, A-jacks, lunkers, vegetated geogrid, and live fascines, will be used to stabilize the banks and repair erosion sites along Weller Creek.

Weller Creek is an urban stream with headwaters at the north boundary of the Village of Mount Prospect at Central Road. The watershed consists of the southeast portion of the Village of Arlington Heights, as well as the northwest side of Mount Prospect. Flows in the project area of Weller Creek vary from 1,000 cfs during a 10-year storm to 2,000 cfs during a 100-year storm. Soils in the area are primarily Sawmill Silty Clay Loam.

The preliminary investigation of over 2 miles of Weller Creek from the School Street to the headwaters at Central Road recommended a stabilization program in four phases. The first phase consists of the reach of Weller Creek from Elmhurst Road to the footbridge at School Street. School Street is an obvious boundary because just downstream of the footbridge the banks were stabilized during a previous project.

This project reach runs through a residential neighborhood comprised of single family homes. The back yards of all the homes along the creek extend to the channel bank, and the back property lines of some lots coincide with the original centerline of the creek. All lots adjacent to the creek in this reach have a 10 foot to 30 foot utility easement parallel to the channel. Pedestrian bridges cross at School Street and at Emerson Street. Automobile traffic crosses the channel on bridges at Main Street and Elmhurst Road.

Before residential development of the watershed, it appears the channel had been straightened, probably channelized for agricultural purposes. Now, due to increased flow caused by urbanization, the channel is reproducing the natural meander by eroding the adjacent backyards and creating steep fifteen foot high banks.

Throughout the preliminary investigation, an ad-hoc committee consisting of local property owners and residents has been providing input. The members collected property plat maps to increase the accuracy of the plans. The ad-hoc committee and Village staff also visited completed streambank stabilization projects in other communities. Several other meetings were attended by the designer, the Mount Prospect staff, and the ad-hoc committee to discuss the conceptual plans for streambank stabilization. The meetings were an opportunity to explain the methods to be used and the reason for their selection. The residents expressed their concerns and those of their neighbors; the designer then incorporated their comments into the plans.

A presentation to the Mount Prospect Village Board Committee of the Whole was made on December 12, 1995. Mount Prospect staff introduced the project and provided the background information. The designer presented an overview of the erosion problem with a video of their field reconnaissance, conceptual streambank stabilization plans, and samples of specific solutions. The ad-hoc committee chairperson voiced the support of residents for the program. To further public education, the presentation was video taped and broadcast on the local cable television station.

3. RELATIONSHIP TO OTHER ACTIVITIES

This streambank stabilization project is a continuation of a previous downstream stabilization project. In the future, the Village will design stabilization plans for the next phases on the less encroached reaches between Elmhurst Road and Central Road.

4. SCOPE OF WORK AND SCHEDULE

Concept Plans

The preliminary investigation and preparation of concept plans were completed in December 1996.

Public Meeting

The ad-hoc committee will continue to provide input as the project progresses. A public meeting will be held in May 1996 to discuss the plans with the Village Board and residents.

Engineering Plans

The final design plans for the first phase will be prepared after receiving comments during the meeting in June 1996. Expected completion of final plans is November 1996.

Construction

Construction is expected in Spring 1997 and completed no later than December 1998.

5. ESTIMATED COSTS

Site Preparation	$86,000
Slope Stabilization	$748,000
Bottom Stabilization	$1,128,000
Revegetation	$46,000
Mobilization	$70,000
Engineering/Administration	$175,000
TOTAL	$2,253,000

Certifications

THE APPLICANT CERTIFIES THAT:

1. Capability

   a. The applicant has authority/involvement in the project area.

   b. The applicant is capable of addressing the planned scope of work in a timely manner to meet scheduled deadlines during the agreement period.

   c. The applicant has or has demonstrated that it can obtain financial resources (in-kind non-federal match), and has the necessary legal, financial, managerial, and institutional capability to perform the project activities throughout the agreement period.

2. Non-Federal Share

   The Applicant certifies that the Applicant's share of the total project costs is supported solely with non-federal funding used exclusively for this project and is not being used to match any other federal grant.

3. Bribery

   The Applicant certifies that neither it or it's Representatives have not been convicted of bribery or attempting to bribe an officer of the State of Illinois, nor has the Applicant made an admission of guilt of such conduct which is a matter of record.

4. Drug Free Workplace Certification

   The Applicant certifies and agrees that it will provide a drug free workplace as required by Public Act 86-1459, the Drug Free Workplace Act (30 ILCS 480/1), and will comply with all the provisions herein.

5. Covenant Against Contingent Fees

   The Applicant shall warrant that no person or selling agency shall be employed or retained to solicit or secure the contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee. For breach or violation of this warranty, the owner shall have the right to annul the contract without liability or in its discretion to deduct from the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage or contingent fee.

6. Interference With Public Contracting

   In accordance with Public Act 85-1295, the Applicant certifies that it has not been barred from bidding or from entering into a Agreement as a result of a violation of Section 33E-3 or 33E-4 of the Criminal Code of 1961.

7. Debarment, Suspension, and Other Responsibility Matters

The Applicant certifies that to the best of its knowledge and belief, it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a three (3) year period preceding a Agreement been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or Agreement under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, local) with commission of any of the offenses enumerated in paragraph 2 of this certification; and

d. Have not within a three (3) year period preceding a Agreement had one or more public transactions (Federal, State, or local) terminated for cause or default.

A false statement on this certification may be grounds for termination of this Agreement. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to $10,000.00 or imprisonment for up to five (5) years, or both.

8. Fraud and Other Unlawful or Corrupt Practices

The award and administration of grants by the State of Illinois, and of subagreements awarded by Applicants under those grants, must be accomplished free from bribery, graft, kickbacks, and other corrupt practices. The Applicant bears the primary responsibility for prevention and detection of such conduct and for cooperation with appropriate authorities in the prosecution of any such conduct.

The Applicant certifies that it will effectively pursue available state or local legal and administrative remedies, and take appropriate remedial action with respect to any allegations or evidence of such illegality or corrupt practices which are brought to its attention. The Applicant shall advise the IEPA immediately when any such allegation or evidence comes to its attention, and shall periodically advise the IEPA of the status and ultimate disposition of any such matter.

9. Audit and Access to Records

The Applicant certifies that it shall maintain books, records, documents and other evidence directly pertinent to performance on U.S.EPA funded work under this Agreement in accordance with generally accepted accounting practices and principals consistently applied and 40 CFR Part 31 in effect on the date of execution of this Agreement. The Applicant shall also maintain the financial information and data used in

the preparation or support of the cost submission required under 40 CFR 31.36(f) for any negotiated agreement or change order and a copy of the cost summary submitted to the IEPA. U.S.EPA, the Comptroller General of the United States, the U. S. Department of Labor, the IEPA, the Auditor General or any of their authorized representatives shall have access to all such books, records, documents and other evidence for the purpose of inspection, audit and copying during normal business hours. The Applicant will provide proper facilities for such access and inspection.

If this is a formally advertised, competitively awarded, fixed price Agreement, the Applicant agrees to make all paragraphs of Certification 9 applicable to all negotiated change orders and agreement amendments affecting the Agreement price. In the case of all other types of prime agreements, the Applicant agrees to make all paragraphs of Certification 9 applicable in all agreements in excess of $10,000.00 and all lower tier agreements in excess of $10,000.00, and to make the first two paragraphs of Certification 9 applicable to all change orders directly related to project performance.

Audits conducted under this provision shall be in accordance with generally accepted auditing standards and with established procedures and guidelines of the reviewing or audit agency(ies).

The Applicant agrees to disclose all information and reports resulting from access to records under paragraphs 1 and 2 above to any agencies referred to in paragraph 1.

The Applicant shall maintain, for a minimum of five (5) years after the completion of the Agreement, adequate books, records, and supporting documents to verify the amounts, receipts, and uses of all disbursements of funds passing in conjunction with the agreement; the Agreement and all books, records, and supporting documents related to the Agreement shall be available for review and audit by the Auditor General; and the Recipient agrees to cooperate fully with any audit conducted by the Auditor General and to provide full access to all relevant materials. Failure to maintain the books, records, and supporting documents required by this Section shall establish a presumption in favor of the State for the recovery of any funds paid by the State under the Agreement for which adequate books, records, and supporting documentation are not available to support their purported disbursement.

In addition, those records which relate to any controversy arising under a U.S.EPA assistance agreement, litigation, the settlement of claims arising out of such performance or to costs or items to which an audit exception has been taken shall be maintained and made available by the Applicant until three (3) years after the date of resolution of such appeal, litigation, claim, or exception.

Access to records is not limited to the required retention periods. The authorized representatives designated in paragraph 1 above shall have access to records at any reasonable time for as long as the records are maintained.

This right of access section applies to financial records pertaining to all agreements (except formally advertised, competitively awarded, fixed price agreements) and all agreement change orders regardless of the type of agreement. In addition this right of access applies to all records pertaining to all agreements, agreement change orders and agreement amendments:

a. to the extent the records pertain directly to agreement performance;

b. if there is any indication that fraud, gross abuse or corrupt practices may be involved; or

c. if the agreement is terminated for default or for convenience.

10. Compliance with Government Wide Guidance on Lobbying Restrictions

The Recipient certifies, to the best of its knowledge and belief, that:

a. No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.

b. If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form LLL "Disclosure Form to Report Lobbying" in accordance with its instructions.

c. The undersigned shall require that the language of this certification be included in the award documents for all subcontracts and that all subcontractors shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this Agreement was made or entered into. Submission of this certification is a prerequisite for making or entering into this Agreement imposed by Section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000.00 and not more than $100,000.00 for each such failure.

11. U.S. Export Administration Act of 1979

The Recipient certifies that neither it nor any substantially-owned affiliated company is participating or shall participate in an international boycott in violation of the provisions of the U.S. Export Administration Act of 1979 or the regulations of the U.S. Department of Commerce promulgated under that Act.

12. Taxpayer Identification Number and Legal Status Disclosure Certification

Under penalties of perjury, I certify that the name, taxpayer identification number, and legal status listed below are correct.

Organization: VILLAGE OF MOUNT PROSPECT

Taxpayer Identification Number:

Social Security Number (SSN): _____

Federal Employer Identification Number (FEIN): E9998-1475-02

(If you are an individual, enter your name and SSN as it appears on your Social Security Card. If completing this certification for a sole proprietorship, enter the owner's name followed by the name of the business and the owner's SSN. For all other entities, enter the name of the entity as used to apply for the entity's FEIN and the FEIN.)

Legal Status (please check one):

____ Individual
____ Owner of Sole Proprietorship
____ Partnership
____ Nonresident Alien Individual
X Governmental Entity
____ Estate or Legal Trust
____ Other: _____

____ Tax-exempt Hospital or Extended Care Facility
____ Corporation NOT providing or billing medical and/or health care services
____ Corporation providing or billing medical and/or health care services
____ Foreign corporation, partnership, estate, or trust

_____
Signature of Authorized Representative

April 25, 1996
Date

Glen Andler - Director of Public Works
Printed Name and Title

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217/782-3362

May 29, 1996

Mr. Glen Andler
Village of Mount Prospect
1700 West Central Road
Mount Prospect, Illinois 60056

RE: Nonpoint Source Pollution Control Program
FFY 97 -- Section 319 Financial Assistance Applications

Dear Mr. Andler:

This letter is to inform you that the Illinois EPA received your application for financial assistance under Section 319 of the Clean Water Act. Your application, *Streambank Stabilization-Weller Creek*, is currently under consideration. A total of 38 projects was submitted with a projected total cost of over fifteen million dollars. A final decision on the projects chosen for funding will be made after December 1, 1996. At that time, the Illinois EPA will contact you concerning the projects selected for funding.

Sincerely,

Joel Cross

Joel Cross, Manager
Planning Section
Division of Water Pollution Control

CD:dls.ffy319aps

Printed on Recycled Paper

EXHIBIT F

PERMIT REQUIREMENTS

U.S. ARMY CORPS OF ENGINEERS
NATIONWIDE PERMIT NO. 13
Bank Stabilization

A No material is placed in excess of the minimum needed for erosion protection.

B The bank stabilization activity is less than 500 feet in length.

C The activity will not exceed an average of one cubic yard per running foot placed along the bank below the plane of the ordinary high water mark or the high tide line.

D No material is placed in any special aquatic site, including wetlands.

E No material is of the type or is placed in any location or in any manner so as to impair surface water flow into or out of any wetland area.

F No material is placed in a manner that will be eroded by normal or expected high flows (properly anchored trees and treetops may be used in low energy areas).

G The activity is part of a single and complete project. Bank stabilization activities in excess of 500 feet in length, or greater than an average of one cubic yard per running foot may be authorized if the permittee notifies the district engineer in accordance with the "Notification" general condition, and the district engineer determines the activity complies with the other terms and conditions of the nationwide permit, and the adverse environmental impacts are minimal both individually and cumulatively (Sections 10 and 404).



ILLINOIS DNR - OFFICE OF WATER RESOURCES
PERMIT NO. 3

Shoreline and Streambank Protection

To be authorized by this permit, construction of shoreline and streambank protection must meet the following criteria:

A Only the following materials may be utilized: stone and concrete riprap, steel sheet piling, cellular blocks, fabric-formed concrete, gabion baskets, rock and wire mattresses, sand/cement filled bags, geotechnical fabric materials, natural vegetation, and treated timber.

B The length of shoreline or streambank to be protected shall not exceed one thousand (1,000) feet.

C All material utilized shall be properly sized or anchored to resist anticipated forces of current and wave action.

D Materials shall be placed in a way which would not cause erosion or the accumulation of debris on properties adjacent to or opposite the project.

E Materials shall not be placed higher than the existing top of bank.

F Materials shall be placed so that the modified cross-sectional area of the channel will conform to that of the natural channel upstream and downstream of the site. In no case shall the cross-sectional area of the natural channel be reduced. The bank may be graded to obtain a flatter slope and to lessen the quantity of material required.

G If broken concrete is used, all protruding materials such as reinforcing rods shall be cut flush with the surface of the concrete and removed from the construction area.

H Disturbance of vegetation shall be kept to a minimum during construction to prevent erosion and sedimentation. All disturbed areas shall be seeded or otherwise stabilized upon completion of construction.

I In the case of seawalls and gabion structures on lakes, the structure shall be constructed at or landward of the water line as determined by the normal pool elevation.

J This regional permit does not authorize filling for the purpose of converting public water to private use.



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

Section 401 of the Clean Water Act

A The applicant for a permit shall not cause:

- Violation of applicable water quality standards of the Illinois Pollution Control Board, Title 35, Subtitle C: Water Pollution Rules and Regulation;
- Water pollution defined and prohibited by the Illinois Environmental Protection Act; and
- Interference with water use practices near public recreation areas or water supply intakes.

B The applicant shall provide adequate planning and supervision during the project construction period for implementing construction methods, processes and cleanup procedures necessary to prevent water pollution and control erosion.

C Any spoil material excavated, dredged or otherwise produced must not be returned to the waterway but must be deposited in a self-contained area in compliance with all state statutes, regulations and permit requirements with no discharge to waters of the State unless a permit has been issued by this Agency. Any backfilling must be done with clean material and placed in a manner to prevent violation of applicable water quality standards.

D All areas affected by construction shall be mulched and seeded as soon after construction as possible. The applicant shall undertake necessary measures and procedures to reduce erosion during construction. Interim measures to prevent erosion during construction shall be taken and may include the installation of staked straw bales, sedimentation basins and temporary mulching. All construction within the waterway shall be conducted during zero or low flow conditions. The applicant shall be responsible for obtaining an NPDES Storm Water Permit prior to initiating construction if the construction activity associated with the project will result in the disturbance of 5 (five) or more acres, total land area. An NPDES Storm Water Permit may be obtained by submitting a properly completed Notice of Intent (NOI) form by certified mail to the Agency's Division of Water Pollution Control, Permit Section.

E The applicant shall implement erosion control measures consistent with the "Standards and Specifications for Soil Erosion and Sediment Control" (IEPA/WPC/87-012).

F The projects conducted under this certification may include limited bank regrading to facilitate the placement of revetment or plant materials. Relocation of the stream channel is not permitted under this certification. Temporary diversion of the stream flow is authorized as a means of isolating the work area during construction.



EXHIBIT G

LEGAL OPINION
OF VILLAGE OF MOUNT PROSPECT AUTHORITY
OVER WELLER CREEK

ARNSTEIN
&
LEHR

MEMORANDUM

To: Michael E. Janonis, Village Manager
From: Everette M. Hill, Jr.
Subject: Bank Stabilization Program for Weller Creek
Date: May 9, 1996

The Village is studying the problem of bank erosion along Weller Creek. Numerous questions have arisen with respect to the Village's jurisdiction over Weller Creek and numerous properties along Weller Creek where easements have not been obtained and the property owners own to the center of the creek.

The history of the Village's power and responsibilities with respect to Weller Creek and its drainage area, have been discussed in previous memoranda. In summary, the Village took over the jurisdiction of the Weller Creek Drainage District by virtue of a 1972 Court Order. Therefore, the Village has assumed whatever rights and responsibilities the Drainage District had with respect to Weller Creek within the Corporate limits of Mount Prospect. This includes the right to assure that the banks of the creek remain stable and the responsibility to act reasonably, as to the protection of properties along those banks.

It is my opinion that the Village has the right to pursue bank stabilization even in those areas where property owners own to the center of the creek. The reasons for this are twofold. First and most importantly, the Village has acquired a prescriptive easement through the entirety of this drainage ditch by virtue of its introduction of waters into the creek and causing the flow of these waters along this entire water-way for well over 50 years. A prescriptive easement is one that pertains as a matter of law, even where there is no written grant of easement. This prescriptive easement includes not only the flow of water, but also the right and responsibility to assure that properties along the flowage are not damaged. This ownership of the prescriptive easement is further bolstered by the rationalization that once the users of the drainage area rely on Weller Creek to carry their stormwater, they have the right to rely on its continued usage.

Secondly, as has been pointed out in a previous memo, the Illinois legislature has provided by statute that a municipality that uses a drainage system has the right to assure that waters it introduces into the system continue to flow. This includes the right to make repairs to the system.

While the Village has the right to pursue the bank stabilization program, we should at the same time attempt to obtain actual grants of easements where no such grants now exist.

If you have further questions with respect to this issue, please contact me.

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