

**Winnetka Village Council**  
**STUDY SESSION**  
**Village Hall**  
510 Green Bay Road  
Tuesday, December 11, 2012  
7:30 p.m.

Emails regarding any agenda item are welcomed. Please email [contactcouncil@winnetka.org](mailto:contactcouncil@winnetka.org), and your email will be relayed to the Council. Emails for a Tuesday Council meeting must be received by Monday at 4 p.m. Any email may be subject to disclosure under the Freedom of Information Act.

**AGENDA**

- 1) Call to Order
- 2) U.S. Cellular Cell Site Agreement .....2
- 3) Stormwater Master Plan – Drainage Study of Six Additional Watershed Areas .....33
- 4) Public Comment
- 5) Executive Session
- 6) Adjournment

**NOTICE**

All agenda materials are available at [villageofwinnetka.org](http://villageofwinnetka.org) (*Council > Current Agenda*); the Reference Desk at the Winnetka Library; or in the Manager’s Office at Village Hall (2<sup>nd</sup> floor).

Broadcasts of the Village Council meetings are televised on Channel 10 and AT&T Uverse Channel 99 every night at 7 PM. Webcasts of the meeting may also be viewed on the Internet via a link on the Village’s web site: [villageofwinnetka.org](http://villageofwinnetka.org)

The Village of Winnetka, in compliance with the Americans with Disabilities Act, requests that all persons with disabilities who require certain accommodations to allow them to observe and/or participate in this meeting or have questions about the accessibility of the meeting or facilities, contact the Village ADA Coordinator – Megan Pierce, at 510 Green Bay Road, Winnetka, Illinois 60093, 847.716.3543; T.D.D. 847.501.6041.

## REVISED AGENDA REPORT

**SUBJECT:** U.S. Cellular Cell Site Agreements

**PREPARED BY:** Katherine S. Janega, Village Attorney

**REF:** November 20, 2007 Council Agenda, pp. 137 - 150

**DATE:** December 5, 2012

In the late 1980's, the Village of Winnetka began entering into license agreements with wireless telecommunications service providers, pursuant to which those carriers installed cellular telephone service antennas on certain property owned by the Village ("cell sites"). Four wireless telecommunications companies have a cell site on the tower of the Water & Electric Plant at Tower Road and the Lake: Nextel, New Cingular Wireless (a subsidiary of AT&T), U.S. Cellular and Verizon. (AT&T also has a cell site on the Police Department communications monopole.)

As the initial agreements moved into their extension periods, the Village took steps to synchronize the termination of the extended agreements and then granted short-term extensions, to allow time for staff to negotiate new agreements that would standardize contract terms, increase compensation to the Village, and standardize the compensation escalation provisions. This culminated in the Council's adoption of resolutions R-45-2007 (Verizon), R-46-2007 (U.S. Cellular), R-50-2007 (Nextel) and R-4-2008 (New Cingular Wireless), authorizing new agreements with those providers "substantially in the form" presented to the Council in the draft agreements that were attached as exhibits to the resolutions. The new agreements included substantial increases in compensation, a uniform formula for annual increases in compensation, and initial 10-year license terms, followed by automatic one-year extensions, up to 2020.

Some additional negotiations followed Council approval, primarily to fine-tune definitions and to update the rights granted so that the new agreements were clearly limited to the licensee facilities that were on the site under the prior agreements.

After numerous delays in exchanging drafts and finalizing the terms with U.S. Cellular, the final agreement was sent to U.S. Cellular for signature in October of 2012, with instruction to return the signed document by November 15. On November 8, U.S. Cellular's attorney contacted the Village Attorney to confirm news reports that U.S. Cellular had entered into an agreement with Nextel for Nextel to acquire U.S. Cellular's customer base and service territories. The projected closing on that transaction is July of 2013, subject to regulatory approvals, and U.S. Cellular asked to shorten the initial term of the license agreement from 2017 to 2013. Because of the Council's "substantially in the form" authorization, the Village Attorney informed U.S. Cellular that staff could not agree to a shorter term unless the Village Council concurred. In addition, because U.S. Cellular's proposed termination of the agreement is voluntary, notice of termination must be given at least 12 months before the expiration of the term. Therefore, the Village Attorney informed U.S. Cellular that the earliest termination she would present to the Council would be March 31, 2014.

To capture full compensation and avoid a dispute over the end of the term, staff proposes to agree to the shorter initial term, ending March 31, 2014, with optional one-year extensions to no later than the previously approved final date of May 1, 2020. Thus, if Nextel's acquisition of U.S. Cellular does not proceed, the agreement would continue to renew automatically for successive one-year terms, but no later than May 1, 2020, as negotiated. If Nextel acquires U.S. Cellular, and if U.S. Cellular has issued the required written notice of termination, the license would terminate on March 31, 2014, and Nextel/U.S. Cellular would be required to promptly remove all equipment. The shortened term would still follow the same compensation formula and the other terms previously negotiated and approved by the Council, although the shorter term would mean approximately three fewer years of compensation.

Although the basic framework of the agreement is "substantially in the form" previously approved by the Council, it is not necessary to take formal action to amend the agreement. However, because the initial term is shorter than what the Council had anticipated, staff is presenting this report for the Council's consideration.

If the Council concurs with staff's proposal as outlined above, no further Council action is required. If the Council prefers to take formal action, a resolution authorizing a new license agreement with the amended term will be prepared for the next Council agenda.

**Attachments:**

The following materials are attached for the Council's reference:

- Attachment 1**     Agenda materials from the November 20, 2007 Council Agenda
- Agenda Report
  - R-46-2007, with Exhibit 1 (draft agreement)
- Attachment 2**     Copy of U.S. Cellular License Agreement, in the form sent to U.S. Cellular for signature in October 2012

**Recommendation:**

Provide policy direction regarding the proposed modification to the initial term of the U.S. Cellular cell site agreement.

**ATTACHMENT 1**

**U.S. Cellular Agenda Materials  
November 20, 2007 Council Meeting**

## AGENDA REPORT

**SUBJECT:** R-46-2007 U.S. Cellular, Cell Site Lease Agreement

**PREPARED BY:** Brian Keys, Director Water & Electric

**DATE:** November 14, 2007

**REF.:** April 17, 2007 Council Meeting, pp. 34-37  
 October 2, 2007 Council Meeting, pp. 50-53

The Village previously entered into a license agreement with Primeco (U.S. Cellular), which allowed certain cellular communication antennas to be placed on the smokestack of the Water and Electric Plant located at Tower Road and the Lake. The License agreement expired on March 30, 2007. Pursuant to resolutions R-19-2007 and R-39-2007, the Council approved a lease extension through April 1, 2008 to provide additional time for staff to negotiate a new agreement that would be retroactive to the March 2007 expiration.

Village Staff and U.S. Cellular have tentatively agreed to terms for a new license agreement, the key terms of which are summarized in the table below. This is the second of four license agreements that Village Staff is working to renegotiate.

	<b>Previous Terms</b>	<b>Proposed Terms</b>
<b>Lease Payment</b>	\$24,000/year [Present Annual Amount: \$34,527.27]	\$39,000 Annual (Annual payment on anniversary of commencement date)
<b>Escalation</b>	Preceding year's Consumer Price Index plus one percent (1%)	4% per year
<b>Initial Term</b>	10 years	10 years, beginning April 1, 2007
<b>Renewal Terms</b>	Three successive 3 year periods unless terminated by either party	Three (1) year terms unless terminated by either party
<b>Expiration</b>	March 30, 2007	March 31, 2020, unless terminated by either party at end of ten year term.

Resolution R-46-2007 authorizes a new license agreement with U.S. Cellular (formerly Primeco). Exhibit A contains the proposed license agreement with U.S. Cellular.

**Recommendation:**

Consider adopting Resolution R-46-2007, approving the new license agreement with U.S. Cellular.

**RESOLUTION NO. R-46-2007**

**A RESOLUTION AUTHORIZING  
A LICENSE AGREEMENT PERMITTING A CELLULAR ANTENNA SITE  
FOR U.S. CELLULAR WIRELESS AT THE WATER & ELECTRIC PLANT**

**WHEREAS**, the Village of Winnetka, Cook County, Illinois (the “Village”) is a home rule municipal corporation as provided in Article VII, Section 6 of the 1970 Constitution of the State of Illinois and, pursuant to said constitutional authority, may exercise any power and perform any function pertaining to its government and affairs for the protection of the public health, safety, morals and welfare; and

**WHEREAS**, on March \_\_, 1996, the Village entered into a license agreement with PCS Primeco, L.P., (“Primeco”), a Delaware limited partnership, to allow that licensee to install certain cellular telecommunications antennas on the smokestack of the Water and Electric Plant located at the shore of Lake Michigan at Tower Road (“License Agreement”); and

**WHEREAS**, United States Cellular Operating Company of Chicago, L.L.C. (“U.S. Cellular”), a Delaware limited liability company, is a successor in interest to Primeco; and

**WHEREAS**, pursuant to the terms of the License Agreement and to extensions approved by resolution of the Village Council, the License Agreement was extended to allow representatives of the Village and U.S. Cellular to complete negotiations for a new License Agreement, provided that the new License Agreement, and the compensation provided therein, would be effective on April 1, 2007; and

**WHEREAS**, Village staff has completed negotiations and has prepared a draft License Agreement for consideration by the Village Council, a copy of which is attached hereto as Exhibit A and incorporated herein by reference, as if set fully set forth herein; and

**WHEREAS**, Village Council have determined that entering into a new License Agreement with U.S. Cellular, substantially in the form attached, is in the best interests of the Village’s health, safety and general welfare.

**NOW, THEREFORE**, be it resolved by the Council of the Village of Winnetka as follows:

**SECTION 1:** The Village Council hereby adopts by reference the foregoing recitals as its findings of fact as if fully set forth herein.

**SECTION 2:** The Village Council hereby approves the License Agreement Permitting a Cellular Antenna Site for U.S. Cellular at the Water & Electric Plant (“License Agreement”), substantially in the form attached hereto as Exhibit 1.

**SECTION 3:** Subject to approval of the final form of the License Agreement by the Village Attorney, the Village President and the Village Clerk are hereby authorized and directed to execute and seal the License Agreement, and to take all such other actions as may be necessary to execute the agreement and effectuate its terms.

**SECTION 4:** This Resolution is adopted by the Council of the Village of Winnetka in the exercise of its home rule powers pursuant to Section 6 of Article VII of the Illinois Constitution of 1970.

**SECTION 5:** This Resolution shall take effect immediately upon its adoption.

**ADOPTED** this \_\_\_\_\_ day of \_\_\_\_\_, 2007, pursuant to the following roll call vote:

AYES: \_\_\_\_\_

NAYS: \_\_\_\_\_

ABSENT: \_\_\_\_\_

Signed:

\_\_\_\_\_  
Village President

Countersigned:

\_\_\_\_\_  
Village Clerk

**LICENSE AGREEMENT  
PERMITTING A CELLULAR ANTENNA SITE  
AT THE WATER & ELECTRIC PLANT (U.S. Cellular)**

This Winnetka License Agreement ("Agreement") is entered into as of April 1, 2007, between the VILLAGE OF WINNETKA, an Illinois home rule municipality ("Licensor"), and United States Cellular Operating Company of Chicago, LLC., a Delaware limited liability company ("Licensee").

For good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

**1. Definitions.**

Licensor and Licensee agree that the respective terms as used herein shall, unless the context otherwise requires, have the following meanings:

"Building" means the building located on the Land and housing the Licensor's power plant and water treatment facilities. The Tower (Smokestack) is part of the Building.

"Land" means the parcel of real estate owned by Licensor and legally described on Exhibit A hereto, which is commonly known as 725 and 735 Tower Road, Village of Winnetka, Cook County, Illinois.

"Licensed Premises" means the interior portion of the building and certain exterior portions on and adjacent to the Tower including the existing platforms, all as depicted on Exhibit B hereto, which portions of the Building and Tower are licensed to Licensee subject to the terms and conditions of this License Agreement.

"Licensee Facilities" means any radio communications equipment owned and placed by the Licensee on the Property subject to the terms and conditions of this Agreement, which equipment includes the shelter, utility lines, electronic equipment, transmission lines, radio transmitting and receiving antennas, and supporting structures thereto, all as depicted on Licensee's drawings for [Insert Licensee's project reference and date of drawings.] which are incorporated herein by reference.

"Property" means the Land, Tower and Building, collectively.

"Shelter" means the base station equipment box installed on the Licensed Premises, as depicted on Exhibit B hereto.

"Telecommunications Service" means any wireless services offering voice, data and video communications permitted under Commercial Mobile Radio Services, Personal Communications Service-Broadband Radio Station Authorization License.

"Tower" means the smokestack and catwalks located on the Building, as depicted on Exhibit B hereto.

Licensor and Licensee agree that capitalized items defined elsewhere in this Agreement shall have the meaning given in such definition, unless the context or use clearly indicates another or different meaning as intended.

**2. Grant of Rights to Licensee.**

The Licensor hereby grants to Licensee the authority to use the Licensed Premises on a non-exclusive basis for the construction, installation, removal, repair, replacement, maintenance, and operation of the Licensee Facilities in connection with the provisions of Telecommunication Services, subject to the terms and conditions hereinafter stated; provided that Licensee shall not use the Licensed Premises as a regular work site for its personnel, except as such use of the Licensed Premises is required for the construction, installation, removal, repair, replacement, maintenance and operation of the Licensed Premises and Licensee Facilities. Licensee shall at all times have the exclusive use and enjoyment of the Licensee Facilities. Licensor agrees to cooperate with Licensee at Licensee's sole expense, in making application for and obtaining all licenses, permits and any and all other necessary approvals that may be required for Licensee's intended use of the Licensed Premises. It is understood by the parties hereto that Licensee shall be responsible for the making of all applications for all necessary licenses and permits and the payment of all monies related to their acquisition.

**3. Limitation of Rights Granted.**

(a) Licensee acknowledges that Licensor uses the Property in connection with providing electricity and water services within the Village of Winnetka and that the rights granted to Licensee under this Agreement shall at all times be subject to Licensor's right to operate its water and electric departments.

(b) Licensee further acknowledges that the Licensor uses the Property as a location for Licensor's municipal communications antennae and that the rights granted to Licensee under this Agreement shall at all times be subject to Licensor's right to use the Property for such purposes. In the event that the operation of the Licensee Facilities interferes in any way with the Licensor's municipal communications, the Licensee shall immediately cease operation of Licensee Facilities and shall not resume operation until the interference is corrected. Any testing to determine the effectiveness of corrective measures may be conducted only after obtaining approval of the time and manner of testing from the Licensor. In no event shall Licensor be required to remove or relocate any of its communications equipment on the Property for the benefit of the Licensee.

(c) Licensee further acknowledges that Licensor has granted other licenses for the use of the Property. Licensee has determined that such uses as are currently in effect will not interfere with Licensee's operations, and agrees that Licensee shall at all times refrain from interfering in any way with the rights of such other licensees to be present on and use the Property in accordance with the terms of their respective licenses.

(d) Unless Licensee has received prior written approval from Licensor, Licensee shall not use the Licensed Premises for any purpose other than that defined herein, and shall not make any alterations to the Licensed Premises unless specifically approved in this License Agreement or a subsequent amendment hereto.

**4. Access**

(a) Licensee shall have the right at any time following the full execution of this Agreement to enter upon the Property for the purpose of: making necessary engineering surveys, inspections, other reasonably necessary tests and constructing the Licensee Facilities; provided, however, such tests and construction shall be at Licensee's sole cost and expense.

(b) Upon completion of the construction and testing of the Licensee Facilities, Licensee, Licensee's employees, agents and subcontractors shall have access to the Licensed Premises twenty-four (24) hours a day, seven (7) days a week. Licensee agrees to provide Licensor with the name and telephone number of a responsible person (or a responsible position) whom the Licensor may contact twenty-four (24) hours a day, seven (7) days a week.

(c) Prior to entering upon the Property, Licensee shall notify Licensor by telephoning the Plant Operator at (847) 716-3633.

**5. Terms.**

The term of this Agreement ("Term") shall be ten (10) years commencing on April 1, 2007, ("Commencement Date") and extending to and including March 31, 2017, unless otherwise terminated as provided in Section 11. Licensee shall have the right to extend the Term for three (3) successive one (1)-year periods ("Renewal Term(s)") on the same terms and conditions as set forth herein, subject to the payment of increased fees, as set out in the following Section 6 . This agreement shall automatically be extended through each successive Renewal Term unless otherwise terminated as provided in Section 11. Notwithstanding any of the language above, under no circumstances shall this agreement extend beyond May 1, 2020.

**6. License Fee.**

(a) The rights granted to Licensee under this Agreement shall be subject to Licensee's payment of an annual license fee to the Licensor ("License Fee"). The annual License Fee for the first year of the Term shall be paid on or before the Commencement Date. Thereafter, the annual License Fee shall be paid on or before each successive anniversary of the Commencement Date.

(b) The License Fee for the first year of the Term shall be Thirty-Nine Thousand Dollars (\$39,000.00).

(c) For each year after the first year of the Term, the License Fee shall be increased by four percent (4%) over the License Fee charged in the immediately preceding year.

(d) The License Fee for any fractional month at the end of the Term or Renewal Term shall be prorated.

(e) The License Fee shall be payable to Licensor at 510 Green Bay Road, Winnetka, IL 60093; Attention: Accounts Receivable.

**7. Construction and Testing; Restoration of Licensed Premises; and Utilities.**

(a) Licensee, at its sole cost and expense, has the right to erect, maintain and operate the Licensee Facilities on the Licensed Premises. In connection therewith, Licensee has the right to do all work necessary to prepare, maintain and alter the Licensed Premises for Licensee's business operations and to install transmission lines connecting the antennas to the transmitters and receivers, as depicted on Exhibit B hereto.

(b) Prior to commencing reasonable necessary tests related to the construction of the Licensee Facilities, and prior to construction, Licensee shall obtain approval of its tests and construction plans from the Licensor, which approval shall not be unreasonably withheld. All construction plans shall be signed, stamped and sealed by a structural engineer registered as such in the State of Illinois. All test plans related to the construction of the Licensee Facilities shall be signed, stamped and sealed by an engineer registered as such in the State of Illinois. Licensor shall not be entitled to receive any additional consideration in exchange for giving its approval of such plans other than for such permits, inspections and reimbursements for expenses normally required by the community Development Department.

(c) Upon the completion of all tests and construction, Licensee shall remove any debris from the Property resulting from its tests or construction and shall restore the Property to the condition that existed prior to such tests and/or construction, except that such restoration shall not require removal of the Licensee Facilities prior to this Agreement's expiration or earlier termination.

(d) Title to the Licensee Facilities shall be held at all times by Licensee. Licensee Facilities shall remain Licensee's personal property and shall not be deemed fixtures to the Property except as such facilities have become a permanent part of the building or Smokestack. Such permanent additions shall become "Common Facilities." Licensor shall have full use of all Common Facilities that have become a permanent part of the building or Smokestack and do not interfere with Licensee use of the facilities. Licensee shall remove all Licensee Facilities at its sole expense on or before the expiration or earlier termination of the agreement provided, however, that Licensor shall retain the Common Facilities, unless Licensor so notifies Licensee no less than sixty (60) days prior to the Agreement's expiration or earlier termination as to which Common Facilities are to be removed.

(e) Licensee shall purchase all electricity and other utilities used in its operation on the Licensed Premises, except for telephone service, from the Licensor's existing electric and other municipality utilities on the Property. Payment for such utility service shall be at the applicable rates charged by Licensor for comparable customers, as set by the Licensor from time to time by resolution or ordinance, and Licensor specifically reserves the right to adjust such rates in its sole discretion. All utility services shall be metered and the Licensee, at its sole cost and expense, shall pay for the purchase and installation of any such meters, and for the service connections, and any utility line extensions needed to provide such utility service. If the Licensor does not provide a particular type of utility service, or if the Licensor permanently ceases providing any such utility service, including electric service, the Licensee shall have the right to obtain such utility service from any utility company authorized to provide such service, provided that the installation of any meters, service connection and service line extension for such utility service shall be at the sole cost and expense of the Licensee. Any meters, service connections, service line extension or to other utility equipment necessary to provide such utility service to the

Licensee Facilities will be at locations on the Property acceptable to Licensor, including easements for such purposes.

**8. Non-Interference.**

(a) Licensee shall install its facilities Licensee shall operate the Licensee Facilities in a manner that will not cause radio frequency or signal interference to Licensor and other lessees or licensees of the Property, provided that the installation of such lessees or licensees predate the execution of this Agreement or predecessor Agreement(s). All operation by Licensee shall be in compliance with all Federal Communication Commission ("FCC") requirements.

(b) Subsequent to the installation of the Licensee Facilities, Licensor shall not permit its lessees or licensees to install new communication equipment on the Property if such equipment is likely to cause radio frequency or signal interference with Licensee's operation. In the event interference occurs, upon receiving written notice from Licensee of such interference, Licensor agrees to take all reasonable steps necessary to eliminate such interference, in a reasonable time period. The failure of Licensor to do so shall be deemed a material breach of this Agreement by Licensor and shall entitle Licensee to terminate this Agreement for default as provided in Section 11.

(c) Licensee's personal property shall not be deemed fixtures to the Property. Licensee shall remove all Licensee Facilities at its sole expense on or before the expiration or earlier termination of the agreement; provided, however, that Licensor shall be entitled to retain the Catwalk.

**9. Taxes.**

Licensee shall pay all applicable personal property, use or occupational taxes arising from its use of the Licensed Premises at the time such taxes are due. In the event the Property loses its tax-exempt status due to the presence of the Licensee Facilities, Licensee shall promptly pay all such real estate taxes attributable to Licensee's use of the Property. Licensor agrees to promptly notify Licensee in the event that the Property loses its tax-exempt status and further agrees to provide Licensee with a copy of the tax assessment and tax bills for the Property. Licensee's obligation to pay any taxes associated with this Agreement shall terminate when Licensee has paid all such taxes assessed against the Property for the period of time licensee occupies the Licensed Premises. Licensee and its agents shall have the right to challenge and contest any assessed valuation forming the basis of any real estate taxes levied or to be levied, and the amount and validity, in whole or in part, of any real estate taxes levied for which Licensee is responsible under this Section or applicable law. Such challenge or contest may take place by whatever means are legally available or established from time to time by the relevant authorities, but Licensee shall exercise reasonable diligence in all proceedings in connection therewith. The failure of Licensee to pay any applicable personal property, use or occupation taxes, or its share of applicable real property taxes when due, shall be a material breach of this Agreement and shall entitle Licensor to terminate this Agreement for default pursuant to Section 11.

**10. Waiver of Licensor's Lien and Licensee's Lien Obligations.**

(a) Licensor waives any lien rights it may have concerning the Licensee Facilities which are deemed Licensee's personal property and not fixtures, and Licensee has the right to remove the same at any time without Licensor's consent

(b) Licensee will not permit any mechanics' or materialmen's or other liens on the Property for any labor or material furnished Licensee in connection with work performed. Licensee shall promptly pay the determined amount of such lien with all costs, fees and charges, thereby releasing such lien. Licensee shall have the right to contest the validity, nature or amount of any such lien and, upon the final determination of such question, shall immediately pay any adverse judgment rendered with all proper costs and charges and shall have the lien released at its sole expense. Licensee shall immediately provide Licensor with a copy of any lien pertaining to the Property. If Licensee desires to contest any such lien, then prior to commencing such contest, it will furnish Licensor with written notice of such contest. Licensor, in its sole discretion, may require Licensee to secure the payment of such obligation. Licensor shall have the sole discretion to determine the form of such security.. In the event Licensee fails to immediately pay and release any such lien, whether without contest or upon a final determination, such failure shall be a material breach of this Agreement and will be cause for termination under Section 11.

**11. Termination.**

(a) This Agreement may be terminated by either party for a material breach or upon a default of any covenant or term hereof by the other party, which default is not cured within sixty (60) days of receipt of written notice of default, and provided further that any monetary default must be cured, if at all, within ten (10) days from receipt of notice.

(b) Either party may terminate this Agreement at the end of the Initial Term or at the end of any Renewal Term, provided, the party seeking to terminate the Agreement has given the other party twelve (12) months prior written notice.

**12. Destruction or Condemnation.**

If the Property or the Licensed Premises is damaged, destroyed or condemned, and Licensor chooses to rebuild such portion of the Licensed Premises as was damaged, destroyed or condemned, then the decision as to whether this Agreement shall continue shall be mutually agreed to by the Licensor and Licensee within forty-five (45) days of the Licensor's decision to rebuild such portion of the Licensed Premises; provided, however, during such period in which such decision to rebuild and to reuse are pending, the License fee shall be reduced or abated in proportion to the actual reduction or abatement of the use of the Licensed Premises by Licensee. If, however, there is a condemnation or taking, or the property is damaged or destroyed and Licensor chooses not to repair or rebuild such damages, then Licensee shall have the decision whether or not to terminate this lease, with no further liability thereafter, and rent refunded or abated as to the date such damage or taking occurred.

**13. Force Majeure.**

In the event that Licensor or Licensee shall be delayed, hindered in or prevented from the performance of any act required hereunder by reasons of acts of God, strikes, blackouts, labor trouble, inability to procure materials, riot, insurrection, failure to power, restrictive governmental laws or regulations, the act, failure to act or default of the other party, war or other reason beyond their control, then performance of such act shall be excused for the period of the delay and the period for the performance of any such act shall be extended for a period equivalent to the period of such delay but in no event shall this clause postpone, delay or excuse Licensee's payment of applicable fees or taxes to the proper governmental authority as such payments become due; provide, however, that if such performance by any party hereto shall be permanently excused, then this Agreement shall be terminated as of the date of such determination as to the permanency of the period of such nonperformance.

**14. Insurance.**

Licensee, at Licensee's sole cost and expense, shall procure and maintain on the Licensed Premises and on the Licensee Facilities, bodily injury and property damage insurance with a combined single limit of at least Five Million and 00/100 Dollars (\$5,000,000.00) per occurrence. Such insurance shall insure, on an occurrence basis, against all liability of Licensee, its employees, and agents arising out of or in connection with Licensee's use of the Licensed Premises, all as provided for herein. Licensor shall be named as an additional insured on Licensee's policy. Licensee shall also obtain umbrella liability insurance providing coverage in limits of at least \$2,000,000.00 in excess or \$3,000,000 per occurrence. Licensee shall provide to Licensor a certificate of insurance evidencing the coverage required by this Section on or before the Commencement Date.

**15. Assignment and Sublicensing.**

Licensee may not assign, or otherwise transfer all or any part of its interest in this Agreement or in the Licensed Premises without the prior written consent of Licensor; provided, however, that Licensee may assign its interest to its general partner or any subsidiary or affiliate thereof or to any successor-in-interest affiliate or entity without the necessity of obtaining prior written consent of Licensor; provided, that said assignee assumes all of Licensee's obligations herein, that the assignee is legally authorized to assume such obligations, and that Licensee provides written notice to Licensor. Such notice shall include documentation of the assignee's legal authority to assume Licensee's obligations herein. Licensor may assign this Agreement upon written notice to Licensee, subject to the assignee assuming all of Licensor's obligations herein, including but not limited to, those set forth in Sections 10 and 11.

**16. Warranty of Title and Quiet Enjoyment.**

Licensor warrants that; (1) Licensor owns the Property in fee simple and has rights of access thereto; (ii) Licensor has full right to make and perform this Agreement; and (iii) Licensor covenants and agrees with Licensee that upon Licensee paying the License Fee and observing

and performing all the terms, covenants and conditions on Licensee's part to be observed and performed, Licensee may peacefully and quietly enjoy the Premises.

**17. Repairs.**

Routine maintenance and repair of the Property (specifically excluding the Licensed Premises) shall be at Licensor's sole discretion, cost and expense. Licensee, at its sole cost and expense, shall keep the Licensed Premises clean and in good repair for the duration of this Agreement. Licensee, at its sole cost and expense, shall repair any damage to the Property caused by its erection, maintenance, operation and removal of Licensee Facilities, excluding normal wear and tear and loss by casualty or other causes reasonably beyond Licensee's control. Should any damage to the Property due to Licensee's exercise of its rights under this Agreement not be repaired by Licensee within thirty (30) days after notice by Licensor of discovery of such damages, Licensor shall have the right to make such repairs and charge Licensee for such repairs. Licensee shall pay Licensor for such repairs no more than thirty (30) days after the date of Licensor's invoice. Failure of Licensee to make such payment when due shall be a material breach of this Agreement and Licensor shall have the right, at its sole option, to terminate this Agreement pursuant to Section 11.

**18. Indemnity.**

(a) Licensee shall exonerate, hold harmless, indemnify, and defend Licensor, Licensor's employees, officers, agents, representatives, subcontractors and existing licensees from any and all claims, obligations, liabilities, costs, demands, damages, expenses, suits or causes of action, including costs and reasonable attorney's fees, which may arise out of ; (1) any injury to or the death of any person; (2) any damage to property, if such injury, death or damage arises out of or is attributable to or results from Licensee's use and operation of the Licensed Premises

(b) Licensor shall exonerate, hold harmless, indemnify, and defend Licensee, Licensee's employees, agents, representatives and subcontractors from and against any and all liabilities, damages, costs and expenses arising out of or resulting from the negligent acts or omissions of Licensor, its agents, representatives or subcontractors (but not other lessees or licensees of the Property), including without limitations, the failure of any such person or entity to exercise due care with respect to the Licensee Facilities on the Licensed Premises or the negligent interference of any such person with the Licensee Facilities.

(c) The provisions of this section are not intended to constitute a waiver of any immunities or other defenses to which the parties may be entitled under applicable law.

**19. Miscellaneous.**

(a) This Agreement constitutes the entire agreement and understanding between the parties, and supersedes all offers, negotiations and other agreements concerning the subject matter contained herein. Any amendments to this Agreement must be in writing and executed by both parties.

(b) If any provision of this Agreement is invalid or unenforceable with respect to any party, the remainder of this Agreement or the application of such provision to persons other than those as to whom it is held invalid or unenforceable, shall not be affected and each provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

(c) This Agreement shall be binding on and inure to the benefit of the successors and permitted assignees of the respective parties.

(d) Any notice or demand required to be given herein shall be made certified or registered mail, return receipt requested, or reliable overnight courier to the address of the respective parties set forth below:

Licensor: VILLAGE OF WINNETKA  
Attn.: Village Manager  
510 Green Bay Road  
Winnetka, IL 60093

Licensee: US CELLULAR  
Attn: Real Estate  
8410 West Bryn Mawr  
Suite 700  
Chicago, IL 60631

(e) Each party shall promptly notify the other of any changes in the information required pursuant to Section 19(d) and 4(b) of this Agreement, and Licensee shall confirm the information such information annually when submitting payment of the License Fee.

(f) This Agreement shall be governed by the laws of the State of Illinois.

(g) In any case where the approval or consent of one party hereto is required, requested or otherwise to given under this Agreement, such approval or consent shall not be unreasonably delayed or withheld.

(h) All Riders and Exhibits annexed hereto form material parts of this Agreement.

(i) This agreement may be executed in duplicate counterparts, each of which shall be deemed an original.

(j) The Licensor and Licensee acknowledge and agree that any termination by either party pursuant to Section 11(a) shall not be the sole remedy for breach of contract available to such party terminating this Agreement under said Section 11(a).

## **20. Tower Marking and Lighting Requirements.**

Licensor shall be responsible for compliance with all marking and lighting requirements of the Federal Aviation Administration ("FAA") and the FCC; provided, however with respect to the Licensed Premises, Licensee shall be responsible for compliance with all marking and lighting requirements of the FAA and FCC. Should licensee be cited because the Property is not in compliance as a result of Licensor's failure to comply with such requirements and, should Licensor fail to cure the conditions of noncompliance, Licensee may cure the conditions of noncompliance at the Licensee's expense, which amounts may be deducted from the Licensee Fee. Should Licensor be cited because the Property is not in compliance as a result of Licensee's failure to comply with such requirements and should Licensee fail to cure the conditions of noncompliance, Licensor, at its sole discretion, may either cure the conditions of noncompliance at Licensee's expense or provide Licensee with notice of default pursuant to Section 11.

**IN WITNESS WHEREOF**, the parties have executed this Agreement as of the date first above written, pursuant to resolutions duly adopted by each respective party to authorize such act.

**LICENSOR:**

VILLAGE OF WINNETKA,  
an Illinois Home Rule Municipality

**LICENSEE:**

United States Cellular Operating Company  
of Chicago, LLC.,  
a Delaware Limited Liability Company  
Tax ID# 36-6006162

By: \_\_\_\_\_  
Edmund C. Woodbury  
Village President

By: \_\_\_\_\_  
[Signer's Name]  
[Signer's Title]

**ATTEST:**

[SEAL]

**ATTEST:**

[SEAL]

By: \_\_\_\_\_  
Douglas G. Williams  
Village Clerk

By: \_\_\_\_\_  
[Signer's Name]  
Corporate Secretary

**STATE OF ILLINOIS**        )  
  ) **ss:**  
**COUNTY OF COOK**         )

The undersigned a Notary Public, do hereby certify that on \_\_\_\_\_, 2007, there appeared before me in person \_\_\_\_\_ and \_\_\_\_\_, personally known to me to be Licensee's \_\_\_\_\_ and Corporate Secretary, and that each acknowledged to me that (s)he signed and delivered the foregoing instrument in their respective capacities herein set forth pursuant to authority given him by **Authorizing Action of Licensee's Legal Name** and as the free and voluntary act, for the uses and purposes therein set forth.

Witness my hand and official seal  
this \_\_\_\_ of \_\_\_\_\_, 2007.

\_\_\_\_\_  
Notary Public  
My commission expires \_\_\_\_\_, 200\_.

**EXHIBIT A**

**DESCRIPTION OF LAND**

The Land defined in Section 1 of the foregoing Agreement is legally described as follows:

Lots 1, 2 and 3 is Chandler's Subdivision, being a subdivision of Bloc 15 of Hubbard Estate Subdivision, in the northeast Fractional ¼ of Section 17, Township 42 North, Range 13, east of the third principal meridian, as per plat thereof recorded as document number 5849036 (except from said Lots 1, 2 and 3 that part bounded and described as follows, to-wit: beginning at a point in the easterly line of Sheridan Road (being the westerly line of said Chandler's Subdivision 30 feet southerly from (measured at right angles to) the northerly line of said Chandler's Subdivision; running thence northeasterly in a straight line to a point 36 feet southeasterly from (measured at right angles to) the said northerly line of said Chandler's Subdivision at a point 180 feet (as measured along said northerly line of said Chandler's Subdivision) from the easterly line of Sheridan Road; thence northeasterly in a straight line to a point 31 feet from (measured at right angles to) the said northerly line of said Chandler's Subdivision, at a point 233 feet (as measured along said northerly line of said Chandler's Subdivision) from the easterly line of Sheridan Road; thence northeasterly in a straight line to a point 55 feet from (measured at right angles to) the said northerly line of said Chandler's Subdivision, at a point 357.5 feet (measured along said northerly line of said Sheridan Road; thence southeasterly in a straight line to a point 3 feet due north of a point in the north line of North Avenue (being the south line of said Chandler's Subdivision) said point in North Avenue being 468 feet east (measured along the north line of said North Avenue) of the northeast corner of Sheridan Road and North Avenue; thence south in a straight line a distance of 3 feet to the north line of North Avenue a distance of 468 feet to the point of intersection of the north line of North Avenue with the northeasterly line of Sheridan Road; thence northwesterly along the northeasterly line of Sheridan Road to the place of beginning) all in Cook County, Illinois,

and is otherwise commonly known as 725 and 735 Tower Road, Winnetka, Illinois.

PINs: 05-17-203-007  
05-17-203-011

**ATTACHMENT 2**

**U.S. Cellular License Agreement  
October 2012 Signature Draft**

**LICENSE AGREEMENT  
PERMITTING A CELLULAR ANTENNA SITE  
AT THE WATER & ELECTRIC PLANT (U.S. Cellular)**

This Winnetka License Agreement (“Agreement”) is entered into as of April 1, 2007, between the VILLAGE OF WINNETKA, an Illinois home rule municipality (“Licensor”), and United States Cellular Operating Company of Chicago, LLC., a Delaware limited liability company (“Licensee”).

For good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

**1. Definitions.**

Licensor and Licensee agree that the respective terms as used herein shall, unless the context otherwise requires, have the following meanings:

“Building” means the building located on the Land and housing the Licensor's power plant and water treatment facilities. The Tower (Smokestack) is part of the Building.

“Land” means the parcel of real estate owned by Licensor and legally described on Exhibit A hereto, which is commonly known as 725 and 735 Tower Road, Village of Winnetka, Cook County, Illinois.

“Licensed Premises” means those parts of the Land, and of the interior and exterior portions of the Building, including the Tower (“Smokestack”) and existing platforms on which Licensee Facilities, as defined herein, have been installed pursuant to and in compliance with Village of Winnetka Resolution No. R-1301-95 and Exhibit B thereto, a copy of which Exhibit B is attached hereto.

“Licensee Facilities” means any radio communications equipment owned and placed by the Licensee on the Property as of November 18, 2007, pursuant to the terms and conditions of the Original License Agreement and any extensions thereto, which equipment includes the Shelter, utility lines, electronic equipment, transmission lines, radio transmitting and receiving antennas, and supporting structures thereto, all as depicted on Licensee's drawings “CGB-038,” dated February 2, 1996, which were incorporated into the Original License Agreement by reference.

“Original License Agreement” means that certain agreement between the Village of Winnetka and Licensee’s predecessor, PCS Primeco, LP, a Delaware limited partnership, dated March 26, 1996, and titled “Winnetka License Agreement,” including the exhibits thereto.

“Property” means the Land, Tower and Building, collectively.

“Shelter” means the base station equipment box installed by Licensee on the Licensed Premises pursuant to the Original License Agreement, all exhibits thereto, and all other drawings otherwise incorporated into the Original License Agreement by reference.

“Telecommunications Service” means any wireless services offering voice, data and video communications permitted under Commercial Mobile Radio Services, Personal Communications Service-Broadband Radio Station Authorization License.

“Tower” means the smokestack and catwalks located on the Building.

Licensor and Licensee agree that capitalized items defined elsewhere in this Agreement shall have the meaning given in such definition, unless the context or use clearly indicates another or different meaning as intended.

## **2. Grant of Rights to Licensee.**

The Licensor hereby grants to Licensee the authority to use the Licensed Premises on a non-exclusive basis for the construction, installation, removal, repair, replacement, maintenance, and operation of the Licensee Facilities in connection with the provisions of Telecommunication Services, subject to the terms and conditions hereinafter stated; provided that Licensee shall not use the Licensed Premises as a regular work site for its personnel, except as such use of the Licensed Premises is required for the construction, installation, removal, repair, replacement, maintenance and operation of the Licensed Premises and Licensee Facilities. Licensee shall at all times have the exclusive use and enjoyment of the Licensee Facilities. Licensor agrees to cooperate with Licensee at Licensee's sole expense, in making application for and obtaining all licenses, permits and any and all other necessary approvals that may be required for Licensee's intended use of the Licensed Premises. It is understood by the parties hereto that Licensee shall be responsible for the making of all applications for all necessary licenses and permits and the payment of all monies related to their acquisition.

## **3. Limitation of Rights Granted.**

(a) Licensee acknowledges that Licensor uses the Property in connection with providing electricity and water services within the Village of Winnetka and that the rights granted to Licensee under this Agreement shall at all times be subject to Licensor's right to operate its water and electric departments.

(b) Licensee further acknowledges that the Licensor uses the Property as a location for Licensor's municipal communications antennae and that the rights granted to Licensee under this Agreement shall at all times be subject to Licensor's right to use the Property for such purposes. In the event that the operation of the Licensee Facilities interferes in any way with the Licensor's municipal communications, the Licensee shall immediately cease operation of Licensee Facilities and shall not resume operation until the interference is corrected. Any testing to determine the effectiveness of corrective measures may be conducted only after obtaining approval of the time and manner of testing from the Licensor. In no event shall Licensor be required to remove or relocate any of its communications equipment on the Property for the benefit of the Licensee.

(c) Licensee further acknowledges that Licensor has granted other licenses for the use of the Property. Licensee has determined that such uses as are currently in effect will not interfere with Licensee's operations, and agrees that Licensee shall at all times refrain from interfering in any way with the rights of such other licensees to be present on and use the Property in accordance with the terms of their respective licenses.

(d) Unless Licensee has received prior written approval from Licensor, Licensee shall not use the Licensed Premises for any purpose other than that defined herein, and shall not make any alterations to the Licensed Premises unless specifically approved in this License Agreement or a subsequent amendment hereto.

#### **4. Access**

(a) Licensee shall have the right at any time following the full execution of this Agreement to enter upon the Property for the purpose of: making necessary engineering surveys, inspections, other reasonably necessary tests and constructing the Licensee Facilities; provided, however, such tests and construction shall be at Licensee's sole cost and expense.

(b) Upon completion of the construction and testing of the Licensee Facilities, Licensee, Licensee's employees, agents and subcontractors shall have access to the Licensed Premises twenty-four (24) hours a day, seven (7) days a week. Licensee and Licensor each agrees to provide the other party with the name and telephone number of a responsible person (or a responsible position) whom the other party may contact twenty-four (24) hours a day, seven (7) days a week.

(c) Prior to entering upon the Property, Licensee shall notify Licensor by telephoning the Plant Operator at (847) 716-3633.

#### **5. Terms**

The term of this Agreement ("Term") shall be ten (10) years commencing on April 1, 2007, ("Commencement Date") and extending to and including March 31, 2017, unless otherwise terminated as provided in Section 11. Licensee shall have the right to extend the Term for three (3) successive one (1)-year periods ("Renewal Term(s)") on the same terms and conditions as set forth herein, subject to the payment of increased fees, as set out in the following Section 6. This agreement shall automatically be extended through each successive Renewal Term unless otherwise terminated as provided in Section 11. Notwithstanding any of the language above, under no circumstances shall this agreement extend beyond May 1, 2020.

#### **6. License Fee and Additional Consideration**

(a) The rights granted to Licensee under this Agreement shall be subject to Licensee's payment of an annual license fee to the Licensor ("License Fee"). The annual License Fee for the year of the Term beginning April 1, 2012, shall be paid on or before the date of execution of this License Agreement, but no later than November 15, 2012. Thereafter, the annual License Fee shall be paid on or before each successive anniversary of the Commencement Date.

(b) The License Fee for the year of the Term beginning April 1, 2012, shall be Forty-Seven Thousand Four Hundred Forty-Nine and 46/100 Dollars, (\$47,449.46).

(c) For each year of the Term beginning on or after April 1, 2013, the License Fee shall be increased by four percent (4%) over the License Fee charged in the immediately preceding year.

(d) As a material inducement for Licensor to enter into this License Agreement and specifically in order to (i) fully compensate Licensor for Licensee's continued use, occupation and enjoyment of the Licensed Premises and (ii) satisfy any and all other requirements of Licensor's Resolutions Nos. R-39-2007 and R-46-2007, which provided for the extension of the Original License Agreement with terms retroactive to April 1, 2007, Licensee agrees to pay Licensor an additional one-time payment (hereinafter, the "Additional Consideration") in the

amount of Two Hundred Eleven Thousand, Two Hundred Thirty-Six and 58/100 Dollars (\$211,236.58). Licensor acknowledges receipt of payments from Licensee totaling One Hundred Forty-Four Thousand, Nine Hundred Seventy-Four and 54/100 (\$144,974.54) of the Additional Consideration. The balance of the Additional Consideration, in the amount of Sixty-Six Thousand, Two Hundred Sixty-Two and 04/100 Dollars (\$66,262.04), shall be paid at the same time Licensee pays the License Fee for the year of the Term beginning April 1, 2012, as required in Section 6(b) of this Agreement.

(e) The License Fee for any fractional month at the end of the Term or Renewal Term shall be prorated.

(f) The Licensee Fee and the Additional Consideration shall be payable to Licensor at 510 Green Bay Road, Winnetka, IL 60093; Attention: Accounts Receivable.

## **7. Construction and Testing; Restoration of Licensed Premises; and Utilities.**

(a) Licensee, at its sole cost and expense, has the right to erect, maintain, repair and operate the Licensee Facilities on the Licensed Premises.

(b) Prior to commencing reasonable necessary tests related to the construction of the Licensee Facilities, and prior to construction, Licensee shall obtain approval of its tests and construction plans from the Licensor, which approval shall not be unreasonably withheld. All construction plans shall be signed, stamped and sealed by a structural engineer registered as such in the State of Illinois. All test plans related to the construction of the Licensee Facilities shall be signed, stamped and sealed by an engineer registered as such in the State of Illinois. Licensor shall not be entitled to receive any additional consideration in exchange for giving its approval of such plans other than for such permits, inspections and reimbursements for expenses normally required by the community Development Department.

(c) Upon the completion of all tests and construction, Licensee shall remove any debris from the Property resulting from its tests or construction and shall restore the Property to the condition that existed prior to such tests and/or construction, except that such restoration shall not require removal of the Licensee Facilities prior to this Agreement's expiration or earlier termination.

(d) Title to the Licensee Facilities shall be held at all times by Licensee. Licensee Facilities shall remain Licensee's personal property and shall not be deemed fixtures to the Property except as such facilities have become a permanent part of the building or Smokestack. Such permanent additions shall become "Common Facilities." Licensor shall have full use of all Common Facilities that have become a permanent part of the building or Smokestack and do not interfere with Licensee use of the facilities. Licensee shall remove all Licensee Facilities at its sole expense on or before the expiration or earlier termination of the agreement provided, however, that Licensor shall retain the Common Facilities, unless Licensor so notifies Licensee no less than sixty (60) days prior to the Agreement's expiration or earlier termination as to which Common Facilities are to be removed.

(e) Licensee shall purchase all electricity and other utilities used in its operation on the Licensed Premises, except for telephone service, from the Licensor's existing electric and other municipality utilities on the Property. Payment for such utility service shall be at the applicable rates charged by Licensor for comparable customers, as set by the Licensor from time to time by

resolution or ordinance, and Licensor specifically reserves the right to adjust such rates in its sole discretion. All utility services shall be metered and the Licensee, at its sole cost and expense, shall pay for the purchase and installation of any such meters, and for the service connections, and any utility line extensions needed to provide such utility service. If the Licensor does not provide a particular type of utility service, or if the Licensor permanently ceases providing any such utility service, including electric service, the Licensee shall have the right to obtain such utility service from any utility company authorized to provide such service, provided that the installation of any meters, service connection and service line extension for such utility service shall be at the sole cost and expense of the Licensee. Any meters, service connections, service line extension or to other utility equipment necessary to provide such utility service to the Licensee Facilities will be at locations on the Property acceptable to Licensor, including easements for such purposes.

## **8. Non-Interference.**

(a) Licensee shall operate the Licensee Facilities in a manner that will not cause radio frequency or signal interference, whether to Licensor's operations or to other lessees or licensees of the Licensor with telecommunications facilities on the Property, provided that the installation of such other lessee or licensee facilities predate the installation of Licensee Facilities under the Original Agreement. All operations by Licensee shall be in compliance with all Federal Communication Commission ("FCC") requirements.

(b) Subsequent to the installation of the Licensee Facilities, Licensor shall not permit its lessees or licensees to install new communication equipment on the Property if such equipment is likely to cause radio frequency or signal interference with Licensee's operation. In the event interference occurs, upon receiving written notice from Licensee of such interference, Licensor agrees to take all reasonable steps necessary to eliminate such interference, in a reasonable time period. The failure of Licensor to do so shall be deemed a material breach of this Agreement by Licensor and shall entitle Licensee to terminate this Agreement for default as provided in Section 11.

(c) Licensee's personal property shall not be deemed fixtures to the Property. Licensee shall remove all Licensee Facilities at its sole expense on or before the expiration or earlier termination of the agreement; provided, however, that Licensor shall be entitled to retain the Catwalk.

## **9. Taxes.**

Licensee shall pay all applicable personal property, use or occupational taxes arising from its use of the Licensed Premises at the time such taxes are due. In the event the Property loses its tax-exempt status due to the presence of the Licensee Facilities, Licensee shall promptly pay all such real estate taxes attributable to Licensee's use of the Property. Licensor agrees to promptly notify Licensee in the event that the Property loses its tax-exempt status and further agrees to provide Licensee with a copy of the tax assessment and tax bills for the Property. Licensee's obligation to pay any taxes associated with this Agreement shall terminate when Licensee has paid all such taxes assessed against the Property for the period of time licensee occupies the Licensed Premises. Licensee and its agents shall have the right to challenge and contest any assessed valuation forming the basis of any real estate taxes levied or to be levied, and the

amount and validity, in whole or in part, of any real estate taxes levied for which Licensee is responsible under this Section or applicable law. Such challenge or contest may take place by whatever means are legally available or established from time to time by the relevant authorities, but Licensee shall exercise reasonable diligence in all proceedings in connection therewith. The failure of Licensee to pay any applicable personal property, use or occupation taxes, or its share of applicable real property taxes when due, shall be a material breach of this Agreement and shall entitle Licensor to terminate this Agreement for default pursuant to Section 11.

#### **10. Waiver of Licensor's Lien and Licensee's Lien Obligations.**

(a) Licensor waives any lien rights it may have concerning the Licensee Facilities which are deemed Licensee's personal property and not fixtures, and Licensee has the right to remove the same at any time without Licensor's consent

(b) Licensee will not permit any mechanics' or materialmen's or other liens on the Property for any labor or material furnished Licensee in connection with work performed. Licensee shall promptly pay the determined amount of such lien with all costs, fees and charges, thereby releasing such lien. Licensee shall have the right to contest the validity, nature or amount of any such lien and, upon the final determination of such question, shall immediately pay any adverse judgment rendered with all proper costs and charges and shall have the lien released at its sole expense. Licensee shall immediately provide Licensor with a copy of any lien pertaining to the Property. If Licensee desires to contest any such lien, then prior to commencing such contest, it will furnish Licensor with written notice of such contest. Licensor, in its sole discretion, may require Licensee to secure the payment of such obligation. Licensor shall have the sole discretion to determine the form of such security. In the event Licensee fails to immediately pay and release any such lien, whether without contest or upon a final determination, such failure shall be a material breach of this Agreement and will be cause for termination under Section 11.

#### **11. Termination.**

(a) This Agreement may be terminated by either party for a material breach or upon a default of any covenant or term hereof by the other party, which default is not cured within sixty (60) days of receipt of written notice of default, and provided further that any monetary default must be cured, if at all, within ten (10) days from receipt of written notice.

(b) Either party may terminate this Agreement at the end of the Initial Term or at the end of any Renewal Term, provided, the party seeking to terminate the Agreement has given the other party twelve (12) months prior written notice.

(c) This Agreement may be terminated by Licensee if Licensee is unable, due to circumstances beyond its control, to occupy and utilize the Licensed Premises due to an action of the FCC, including without limitation, a take back of channels or change in frequencies; provided, however, that Licensee first provides written notice to Licensor within thirty (30) days after receipt of notice from the FCC initiating such action, and that Licensee provides further written notice to Licensor within thirty (30) days after Licensee's receipt of notice of final ruling or any order on appeal of such action. Termination of this Agreement as provided in this paragraph shall become effective no less than ninety (90) days after Licensee notifies Licensor of

the final ruling or final order on the appeal of such action. For purposes of this paragraph, no action taken against Licensee by the FCC or by any other governmental agency having jurisdiction over Licensee's operations shall be considered a circumstance beyond Licensee's control, if such action results from or involves a determination that Licensee has violated any applicable law or regulation in the use and operation of Licensee's Facilities or in the operation of Licensee's business.

## **12. Destruction or Condemnation.**

If the Property or the Licensed Premises is damaged, destroyed or condemned, and Licenser chooses to rebuild such portion of the Licensed Premises as was damaged, destroyed or condemned, then the decision as to whether this Agreement shall continue shall be mutually agreed to by the Licenser and Licensee within forty-five (45) days of the Licenser's decision to rebuild such portion of the Licensed Premises; provided, however, during such period in which such decision to rebuild and to reuse are pending, the License fee shall be reduced or abated in proportion to the actual reduction or abatement of the use of the Licensed Premises by Licensee. If, however, there is a condemnation or taking, or the property is damaged or destroyed and Licenser chooses not to repair or rebuild such damages, then Licensee shall have the decision whether or not to terminate this lease, with no further liability thereafter, and rent refunded or abated as to the date such damage or taking occurred.

## **13. Force Majeure.**

In the event that Licenser or Licensee shall be delayed, hindered in or prevented from the performance of any act required hereunder by reasons of acts of God, strikes, blackouts, labor trouble, inability to procure materials, riot, insurrection, failure to power, restrictive governmental laws or regulations, the act, failure to act or default of the other party, war or other reason beyond their control, then performance of such act shall be excused for the period of the delay and the period for the performance of any such act shall be extended for a period equivalent to the period of such delay but in no event shall this clause postpone, delay or excuse Licensee's payment of applicable fees or taxes to the proper governmental authority as such payments become due; provided, however, that if such performance by any party hereto shall be permanently excused, then this Agreement shall be terminated as of the date of such determination as to the permanency of the period of such nonperformance.

## **14. Insurance.**

Licensee, at Licensee's sole cost and expense, shall procure and maintain on the Licensed Premises and on the Licensee Facilities, bodily injury and property damage insurance with a combined single limit of at least Five Million and 00/100 Dollars (\$5,000,000.00) per occurrence. Such insurance shall insure, on an occurrence basis, against liability of Licensee, its employees, and agents arising out of or in connection with Licensee's use of the Licensed Premises, all as provided for herein. Licenser shall be named as an additional insured on Licensee's policy. Licensee shall also obtain umbrella liability insurance providing coverage in limits of at least \$2,000,000.00 in excess or \$3,000,000 per occurrence. Licensee shall provide

to Licensor a certificate of insurance evidencing the coverage required by this Section on or before the Commencement Date.

**15. Assignment and Sublicensing.**

Licensee may not assign, or otherwise transfer all or any part of its interest in this Agreement or in the Licensed Premises without the prior written consent of Licensor; provided, however, that Licensee may assign its interest to its general partner or any subsidiary or affiliate thereof or to any successor-in-interest affiliate or entity without the necessity of obtaining prior written consent of Licensor; provided, that said assignee assumes all of Licensee's obligations herein, that the assignee is legally authorized to assume such obligations, and that Licensee provides written notice to Licensor. Such notice shall include documentation of the assignee's legal authority to assume Licensee's obligations herein. Licensor may assign this Agreement upon written notice to Licensee, subject to the assignee assuming all of Licensor's obligations herein, including but not limited to, those set forth in Sections 10 and 11.

**16. Warranty of Title and Quiet Enjoyment.**

Licensor warrants that; (1) Licensor owns the Property in fee simple and has rights of access thereto; (ii) Licensor has full right to make and perform this Agreement; and (iii) Licensor covenants and agrees with Licensee that upon Licensee paying the License Fee and observing and performing all the terms, covenants and conditions on Licensee's part to be observed and performed, Licensee may peacefully and quietly enjoy the Premises.

**17. Repairs.**

Routine maintenance and repair of the Property (specifically excluding the Licensed Premises) shall be at Licensor's sole discretion, cost and expense. Licensee, at its sole cost and expense, shall keep the Licensed Premises clean and in good repair for the duration of this Agreement. Licensee, at its sole cost and expense, shall repair any damage to the Property caused by its erection, maintenance, operation and removal of Licensee Facilities, excluding normal wear and tear and loss by casualty or other causes reasonably beyond Licensee's control. Should any damage to the Property due to Licensee's exercise of its rights under this Agreement not be repaired by Licensee within thirty (30) days after notice by Licensor of discovery of such damages, Licensor shall have the right to make such repairs and charge Licensee for such repairs. Licensee shall pay Licensor for such repairs no more than thirty (30) days after the date of Licensor's invoice. Failure of Licensee to make such payment when due shall be a material breach of this Agreement and Licensor shall have the right, at its sole option, to terminate this Agreement pursuant to Section 11.

**18. Indemnity.**

(a) Licensee shall exonerate, hold harmless, indemnify, and defend Licensor, Licensor's officers, employees, agents, representatives, subcontractors and other existing licensees authorized to use the Licensed Premises, from any and all claims, obligations, liabilities, costs, demands, damages, expenses, suits or causes of action, including costs and reasonable attorney's fees, which may arise out of ; (1) any injury to or the death of any person; (2) any damage to

property, if such injury, death or damage arises out of or is attributable to or results from Licensee's use and operation of the Licensed Premises

(b) Licensors shall exonerate, hold harmless, indemnify, and defend Licensee, Licensee's employees, agents, representatives and subcontractors from and against any and all liabilities, damages, costs and expenses, including costs and reasonable attorney's fees, arising out of or resulting from the negligent acts or omissions of Licensors, its agents, representatives or subcontractors (but not other lessees or licensees of the Property), including without limitations, the failure of any such person or entity to exercise due care with respect to the Licensee Facilities on the Licensed Premises or the negligent interference of any such person with the Licensee Facilities.

(c) The provisions of this section are not intended to constitute a waiver of any immunities or other defenses to which the parties may be entitled under applicable law.

(d) Notwithstanding the foregoing, neither party shall have any indemnification obligation hereunder to the extent any liability, damage, cost or expense arises out of or results from the negligence or willful misconduct of any indemnified party.

**19. Miscellaneous.**

(a) This Agreement constitutes the entire agreement and understanding between the parties, and supersedes all offers, negotiations and other agreements concerning the subject matter contained herein. Any amendments to this Agreement must be in writing and executed by both parties.

(b) If any provision of this Agreement is invalid or unenforceable with respect to any party, the remainder of this Agreement or the application of such provision to persons other than those as to whom it is held invalid or unenforceable, shall not be affected and each provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

(c) This Agreement shall be binding on and inure to the benefit of the successors and permitted assignees of the respective parties.

(d) Any notice or demand required to be given herein shall be made certified or registered mail, return receipt requested, or reliable overnight courier to the address of the respective parties set forth below:

Licensors: VILLAGE OF WINNETKA  
Attn.: Village Manager  
510 Green Bay Road  
Winnetka, IL 60093

Licensee: United States Cellular  
Operating Company of  
Chicago, LLC  
Attn: Real Estate  
8410 West Bryn Mawr  
Suite 700  
Chicago, IL 60631

(e) Each party shall promptly notify the other of any changes in the information required pursuant to Section 19(d) and 4(b) of this Agreement, and Licensee shall confirm the information such information annually when submitting payment of the License Fee.

(f) This Agreement shall be governed by the laws of the State of Illinois.

(g) In any case where the approval or consent of one party hereto is required, requested or otherwise to given under this Agreement, such approval or consent shall not be unreasonably delayed or withheld.

(h) All Riders and Exhibits annexed hereto form material parts of this Agreement.

(i) This agreement may be executed in duplicate counterparts, each of which shall be deemed an original.

(j) The Licensor and Licensee acknowledge and agree that any termination by either party pursuant to Section 11(a) shall not be the sole remedy for breach of contract available to such party terminating this Agreement under said Section 11(a).

**20. Tower Marking and Lighting Requirements.**

Licensor shall be responsible for compliance with all marking and lighting requirements of the Federal Aviation Administration (“FAA”) and the FCC; provided, however with respect to the Licensed Premises, Licensee shall be responsible for compliance with all marking and lighting requirements of the FAA and FCC. Should licensee be cited because the Property is not in compliance as a result of Licensor's failure to comply with such requirements and, should Licensor fail to cure the conditions of noncompliance, Licensee may cure the conditions of noncompliance at the Licensee's expense, which amounts may be deducted from the Licensee Fee. Should Licensor be cited because the Property is not in compliance as a result of Licensee's failure to comply with such requirements and should Licensee fail to cure the conditions of noncompliance, Licensor, at its sole discretion, may either cure the conditions of noncompliance at Licensee's expense or provide Licensee with notice of default pursuant to Section 11.

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]

**IN WITNESS WHEREOF**, the parties have executed this Agreement in duplicate original counterparts as of the date first above written, pursuant to resolutions duly adopted by each respective party to authorize such act.

**LICENSOR:**

VILLAGE OF WINNETKA,  
an Illinois Home Rule Municipality

**LICENSEE:**

United States Cellular Operating Company  
of Chicago, LLC.,  
a Delaware Limited Liability Company  
Tax ID# 36-6006162

By: \_\_\_\_\_  
Jessica B. Tucker  
Village President

By: \_\_\_\_\_  
Printed:  
Title: Vice President

ATTEST:  
[SEAL]

ATTEST:  
[SEAL]

By: \_\_\_\_\_  
Robert M. Bahan  
Village Clerk

By: \_\_\_\_\_  
Printed:  
Title: Corporate Secretary

**STATE OF ILLINOIS**            )  
  ) **ss:**  
**COUNTY OF COOK**            )

The undersigned a Notary Public, do hereby certify that on \_\_\_\_\_, 2012, there appeared before me in person \_\_\_\_\_ and \_\_\_\_\_, personally known to me to be, respectively, the Vice President and Secretary of United States Cellular Operating Company of Chicago, LLC, that each acknowledged to me that (s)he signed and delivered the foregoing instrument in their respective capacities herein set forth pursuant to authority duly given each of them by United States Cellular Operating Company of Chicago, LLC, and as the free and voluntary act of Licensee, for the uses and purposes therein set forth.

Witness my hand and official seal  
this \_\_\_\_ of \_\_\_\_\_, 2012.

\_\_\_\_\_  
Notary Public  
My commission expires  
\_\_\_\_\_, 20\_\_.

**EXHIBIT A**

**DESCRIPTION OF LAND**

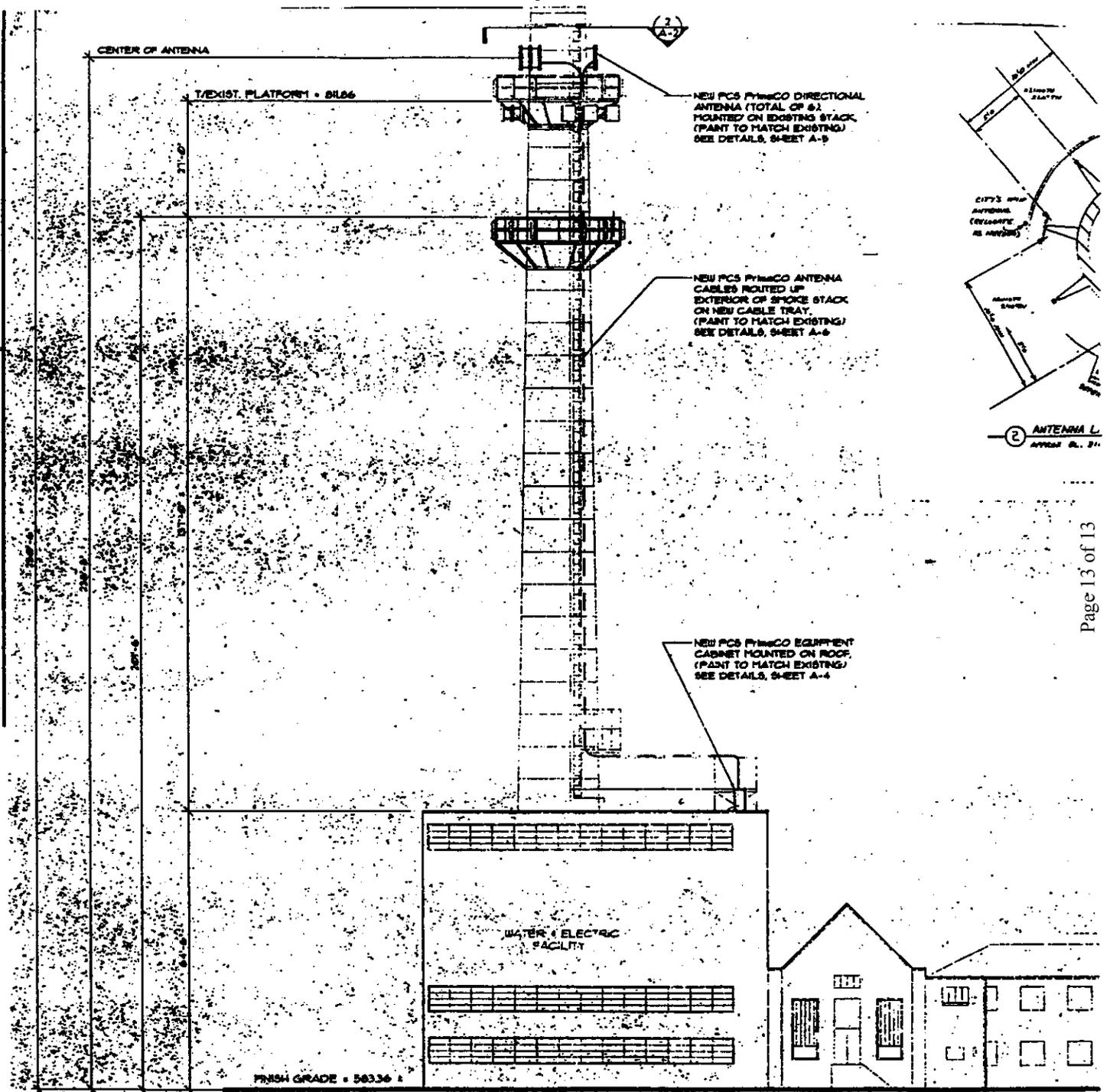
The Land defined in Section 1 of the foregoing Agreement is legally described as follows:

Lots 1, 2 and 3 is Chandler's Subdivision, being a subdivision of Bloc 15 of Hubbard Estate Subdivision, in the northeast Fractional  $\frac{1}{4}$  of Section 17, Township 42 North, Range 13, east of the third principal meridian, as per plat thereof recorded as document number 5849036 (except from said Lots 1, 2 and 3 that part bounded and described as follows, to-wit: beginning at a point in the easterly line of Sheridan Road (being the westerly line of said Chandler's Subdivision 30 feet southerly from (measured at right angles to) the northerly line of said Chandler's Subdivision; running thence northeasterly in a straight line to a point 36 feet southeasterly from (measured at right angles to) the said northerly line of said Chandler's Subdivision at a point 180 feet (as measured along said northerly line of said Chandler's Subdivision) from the easterly line of Sheridan Road; thence northeasterly in a straight line to a point 31 feet from (measured at right angles to) the said northerly line of said Chandler's Subdivision, at a point 233 feet (as measured along said northerly line of said Chandler's Subdivision) from the easterly line of Sheridan Road; thence northeasterly in a straight line to a point 55 feet from (measured at right angles to) the said northerly line of said Chandler's Subdivision, at a point 357.5 feet (measured along said northerly line of said Sheridan Road; thence southeasterly in a straight line to a point 3 feet due north of a point in the north line of North Avenue (being the south line of said Chandler's Subdivision) said point in North Avenue being 468 feet east (measured along the north line of said North Avenue) of the northeast corner of Sheridan Road and North Avenue; thence south in a straight line a distance of 3 feet to the north line of North Avenue a distance of 468 feet to the point of intersection of the north line of North Avenue with the northeasterly line of Sheridan Road; thence northwesterly along the northeasterly line of Sheridan Road to the place of beginning) all in Cook County, Illinois,

and is otherwise commonly known as 725 and 735 Tower Road, Winnetka, Illinois.

PINs: 05-17-203-007  
05-17-203-011

EXHIBIT B



## Agenda Report

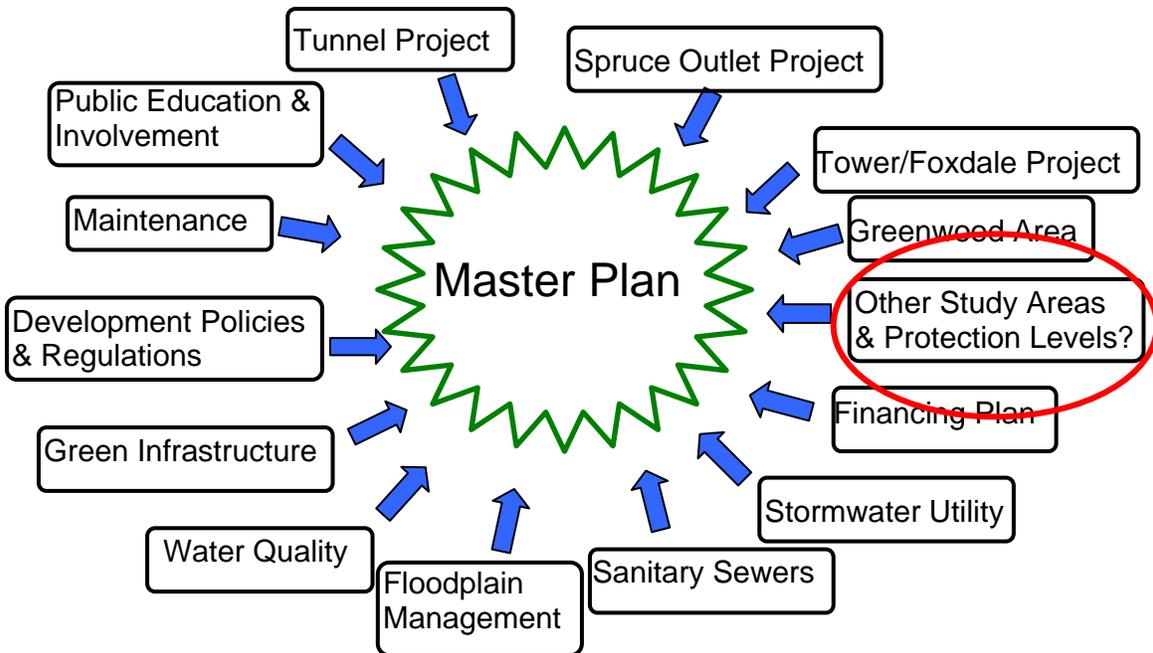
**Subject:** Stormwater Master Plan – Drainage Study of Six Additional Watershed Areas

**Prepared By:** Steven M. Saunders, Director of Public Works/Village Engineer

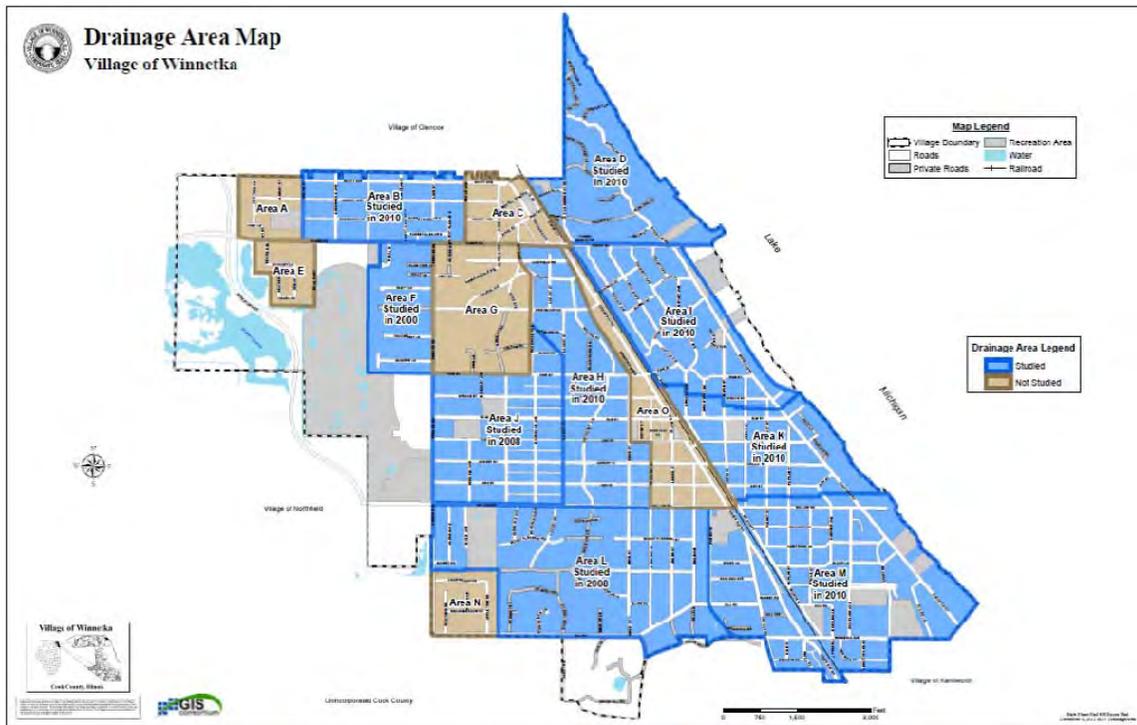
**Date:** December 5, 2012

On June 12, 2012, the Village Council awarded a contract to Baxter & Woodman (B&W) for professional services to develop a Stormwater Master Plan for the Village of Winnetka. The Village Council has determined that a Stormwater Master Plan process will facilitate concurrent activities being undertaken or proposed, to unify all of these activities in a single framework. The overall objective of this project is to develop a clear, comprehensive, and forward-looking framework that encompasses the Village’s existing stormwater management program, presents a detailed investigation into key components of stormwater as it is related to the Village, establishes stormwater management goals for the future, presents tools to meet or exceed established goals and provides a foundation for future policy decisions. The final product will be a document which helps the Village guide the stormwater program for the next five to 10 years and beyond.

The following graphic illustrates this approach currently underway:



One of the first tasks is evaluation of six additional drainage areas not recently studied by Christopher B. Burke Engineering, Ltd. (CBBEL) in the aftermath of the 2008 and 2011 flooding. The six study areas are shown in tan on the following page:



These six study areas are drainage areas of the Village that experience flooding that is generally less severe than the eight areas previously studied by CBBEL. Flooding in these six study areas is more likely to be street and yard flooding, and basement flooding, while it does occur, is more likely to be caused by seepage, sewer backups, or sump pump failures. Structure flooding resulting from ponding or overland flooding is proportionally rarer, and street flooding is generally less severe or frequent, than in the areas previously studied by CBBEL. This pattern was generally evident in the responses to the 2011 flood survey, and is consistent with staff experience and observation.

Consequently, these six areas were not part of the initial scope of investigations and proposed improvements developed by CBBEL and currently under consideration by the Village Council for implementation. Nevertheless, the Village determined that it was important to study these areas as part of the comprehensive stormwater master planning process so that a complete program of potential stormwater needs and improvements can be developed. B&W has completed their evaluation of flooding and has developed proposed improvements for each of the six areas.

It is important to note that B&W used the same basic hydrologic and hydraulic methodology and modeling as CBBEL did for the previously studied areas. This has two implications. First, the level of improvements can be compared across the different studies, meaning that the 100-year level of protection to one of the areas studied by B&W provides the same level of protection at the 100-year level of protection in one of the areas studied by CBBEL.

Second, and more important, since the same methodology and software were used in both studies, the two models are compatible with one another, and CBBEL and B&W shared their models with one another. This is critical because in several instances, drainage areas studied by B&W are interconnected with areas studied by CBBEL. For example, improvements for Area O discharge to either the proposed Provident Avenue storm sewer, or directly to the Willow Road tunnel. Compatible and shared modeling allowed B&W to assure that the receiving sewer has sufficient capacity under the modeled conditions to accept the water being discharged to it.

One other factor of note; the report only provides illustrations and cost estimates for the 100-year level of protection. Lower-level flood conditions were modeled, but in general the solutions were very similar, only using slightly smaller pipe sizes for 50-, 25-, and 10-year storms. As a result, the cost estimates for the lesser protection levels do not vary significantly from the cost for the 100-year level of protection.

B&W has provided a detailed report (**Attachment #1**) that describes the method of study used, existing and proposed conditions in each study area, exhibits showing proposed improvements, and cost estimates for proposed improvements. The study areas are summarized below:

Area A (pages 3-1 to 3-3; Exhibit 2). This area consists of a residential neighborhood bounded by Grove Street on the east, the Cook County Forest Preserve on the west, Tower Road on the south, and the Village of Glencoe on the north. The area experiences flooding near the intersection of Asbury Avenue and Asbury Court, along Pine Tree Lane, and at the southeastern corner of Nick Corwin Park. Three property owners within the area reported flooding due to overland flow resulting from the July 2011 storm event. Two of these properties are located near the intersection of Asbury Avenue with Asbury Court. The other is located just east of the problem area along Pine Tree Lane. The improvements for this area consist of larger storm sewers beneath Asbury Avenue and Pine Tree Lane, with larger discharge pipes to the East Diversion Ditch, at an estimated cost of approximately \$0.5 million.

Area C (pages 3-4 to 3-7; Exhibits 3A-3B). Area C is a mixed residential and commercial area in Hubbard Woods. The owners of seven properties within Area C reported flooding due to the July 2011 storm event. Three of these properties are adjacent to the problem area along Merrill Street. The other four properties are scattered along the west and south boundaries of the study area. The reported types of flooding for these seven properties range from basement seepage and sump pump failure to four instances of overland flow into structures. The improvements in this area consist of larger storm sewers under Merrill Street and Green Bay Road, a new crossing under the Union Pacific Railroad, and ultimately a connection to the existing storm sewer discharging beneath the ravines to Lake Michigan. One important factor to note about this drainage area is that the existing storm sewer discharges to an intercepting sanitary sewer operated by the Metropolitan Water Reclamation District (MWRD) of Greater Chicago at the intersection of Gage and Green Bay Road. This is a permitted connection, constructed with the railroad grade separation in the 1930's when the eastward flowing storm sewers were cut

off and disconnected. Due to a pending consent decree, the MWRD is currently developing a plan to reduce the frequency of combined sewer overflows, which may include requirements that municipalities disconnect separate storm sewers from the combined sewer system. With the possibility that the MWRD may require disconnection of this discharge in mind, two alternatives were modeled for Area C. Alternate 1 disconnects the Village storm sewer system from the MWRD interceptor, while Alternate 2 would maintain the existing connection to the interceptor sewer, but would not increase the rate of discharge to the interceptor sewer beyond the current level. The estimated costs for these two alternatives are about \$1.9 million and \$1.7 million, respectively.

Area E (pages 3-8 to 3-11; Exhibit 4). Area E consists of a residential neighborhood located south of Tower Road between Boal Parkway on the east and the Cook County Forest Preserve on the west. The study area is drained by three outlets to the East Diversion Ditch: an 18-inch pipe draining Heather, Hickory, Sumac, and Hazel Lanes; a 24-inch pipe running through rear yards of properties along Boal Parkway and Sumac Lane; and a 12-inch pipe carrying the drainage from Boal Parkway. The lowest points within Area E are located at the south end of Boal Parkway and in several undrained depressions southwest of the intersection of Boal Parkway and Tower Road. Four property owners within the area reported flooding resulting from the July 2011 storm event. Two of these properties are adjacent to the problem area along Boal Parkway and one is adjacent to the problem area along Hickory Lane. The reported types of flooding for these four properties include basement seepage, sump pump failure and overland flow into three of the structures. The proposed improvements for this area consist of larger storm sewers at several locations, with larger discharges to the East Diversion Ditch. It is important to note that the Boal Parkway area is low-lying, and that the effectiveness of the proposed Boal Parkway improvements varies with the elevation of the water surface in the East Diversion Ditch. B&W performed a sensitivity analysis based on tailwater elevations and determined that the recommended improvements would be very effective with lower tailwater elevations, but less effective under higher tailwater conditions (see Exhibit 4). The cost of the improvements recommended for Area E is estimated to be approximately \$0.9 million.

Area G (pages 3-12 to 3-13; Exhibit 5). Area G is a fairly large drainage area in the north-central portion of the Village bounded by Tower Road on the north, Pine Street on the south, Hibbard Road on the west, and Ardsley Road/Rosewood Avenue/Burr Avenue on the east. Area G slopes steeply from east to west, so the lowest points in the area are along Hibbard Road. Seventeen property owners within the area reported flooding resulting from the July 2011 storm event. The types of flooding reported varied, but the most common types of flooding were basement seepage and sump pump failure. Five of the seventeen properties reported flooding due to overland flow and these properties are scattered across the study area. The street flooding problems in Area G can be alleviated by installing new, larger storm sewers in place of the existing storm sewers. Additional inlet capacity will also be needed in a few critical locations. The proposed improvements would connect to the planned 84-inch storm sewer along Hibbard Road, ultimately discharging to the Willow Road tunnel. The cost of the improvements recommended for Area G is estimated to be around \$2.0 million.

Area N (pages 3-14 to 3-17; Exhibit 6). This drainage area is located in far southwest Winnetka northeast of the intersection of Winnetka Avenue and Hibbard Road. The storm sewers in this low-lying area discharge via Hill Road to a channel in the Cook County Forest Preserve. There are several low-lying depressional areas and street and yard flooding occurs in several locations. The owners of five properties within Area N reported flooding due to the July 2011 storm event. Two of these properties are adjacent to the problem area along Apple Tree Road and one is adjacent to the problem area at the north end of Westview Road. B&W analyzed storm sewer improvements for this area at an estimated cost of approximately \$1.2 million, however tailwater conditions in the Forest Preserve area significantly limit the effectiveness of these proposed improvements. Consequently, B&W recommends that the Village perform a detailed topographic survey of Area N to determine how residences can be protected against overland flooding by making improvements to the overland flow paths within and adjacent to the subdivision. The necessary additional topographic survey information could likely be obtained for about \$10,000.

Area O (pages 3-18 to 3-20; Exhibits 7A-7B). Area O consists of the west Elm Street business district and adjacent residential areas, plus a narrow strip of land along Green Bay Road. The owners of eleven properties within Area O reported flooding due to the July 2011 storm event. Two of these properties are adjacent to a problem area near the intersection of Chestnut Street and Oak Street. Another property is adjacent to a problem area at the intersection of Ridge Avenue and Willow Road. The rest of the properties are scattered throughout the Area O. The reported types of flooding for these eleven properties range from basement seepage and sump pump failure to several instances of overland flow into structures. Like Area C, stormwater from this area discharges to the MWRD intercepting sewer at two locations (Pine Street and Willow Road) via permitted discharges made necessary by the lowering of the Union Pacific Railroad tracks. Similar to Area C, the MWRD may require disconnection of these discharges, so two alternatives were modeled for Area O. Alternate 1 disconnects the Village storm sewer system from the MWRD interceptor sewer at both locations. Alternate 2 would maintain the existing connections to the interceptor sewer, but would not increase the rate of discharge to the interceptor sewer beyond the current level. The proposed improvements consist of larger storm sewers, and would connect to the proposed Willow Road tunnel. The estimated costs for the two alternatives are approximately \$2.3 million and \$1.8 million, respectively.

Summary and Next Steps. The improvements recommended by B&W in this Assessment were designed to provide relief from flood damages for the Additional Study Areas for storms up to and including the 100-year design event. Conceptual improvements were modeled in order to reduce surface flooding in the problem areas to an acceptable level and below all known low-entry elevations. Estimated costs to implement all of the recommended improvements (including the \$1.2 million in recommended improvements for Area N) are \$8.1 million, shown in Table 1 on page 4-1 of the report, reproduced below:

Engineer's Estimate of Probable Cost Summary by Study Area

Engineer's Estimate of Probable Cost (Millions)	
Study Area	100-year
Area A	\$0.5
Area C - Alternate 2	\$1.7
Area E	\$0.9
Area G	\$2.0
Area N	\$1.2
Area O - Alternate 2	<u>\$1.8</u>
Total =	<u>\$8.1</u>

It is necessary to understand this figure in the context of an overall long-term plan for stormwater improvements in Winnetka. Recall that the Village originally contracted with CBBEL to evaluate just the North and South Willow Road study areas, as these areas suffered the most widespread and damaging flooding in September 2008. The study was later expanded to include a second tier of flooding areas including Northwest Winnetka, the Spruce Street Outlet study area, the Cherry Street Outlet study area, the Provident avenue study area, and the Winnetka Underpass study area, and to evaluate improvements up to 100-year protection levels. These studies resulted in a proposed stormwater management program (including financial analysis and master planning contracts) of approximately \$41.1 million. This program provided for flood risk reduction in the areas of the Village where the most frequent or damaging flooding generally occurs, however six areas of the Village remained to be studied as part of the long-term master planning process.

These remaining six areas were not originally studied because while flooding does occur in these areas during heavy and even moderate rains, it is generally shallower, of shorter duration, and less severe than in the previously studied locations, as previously discussed. As part of the master planning process, the Village chose to study these remaining areas, and with the completion of this Flood Risk Reduction Assessment for these six remaining drainage areas, the Village now has the information needed to understand the scope and cost associated with extending 100-year flood risk reduction projects to susceptible areas throughout the entire Village. The Village also has sufficient information to include these costs – along with the cost of other ongoing and planned projects – in the long-range Stormwater Master Plan.

The following table illustrates how these projects might be potentially grouped into categories based on anticipated implementation timeframes. In some cases, these implementation timeframes are necessitated by construction sequencing. For example, the proposed improvements for areas G and O are predicated on the completion of the tunnel project to provide adequate discharge capacity. In other cases, implementation may be more influenced by prioritizing based on the magnitude of flooding conditions in a drainage area.

VILLAGE OF WINNETKA STORMWATER IMPROVEMENTS  
SUMMARY OF ALL ONGOING, PLANNED, AND FUTURE IMPROVEMENTS

Estimate of Probable Cost by Project/Study Area

Project Description	Project Awarded or In Progress (Years 1-2)	Planned Improvements (Years 2-5)	Future Improvements (Years 5-10+)
<u>Spruce Street Outlet Area Improvements</u>			
Tower Road/Foxdale Area	\$ 1,162,853		
Lloyd Park Outlet	\$ 398,786		
<u>Northwest Winnetka Improvements</u>			
Tower Road/Greenwood Area	\$ 3,581,924		
Forest Glen Extension	\$ 685,000		
<u>Winnetka Avenue Pump Station</u>	\$ 750,000		
<u>Master Plan and Rate Study</u>			
Stormwater Master Plan	\$ 101,220		
Utility Feasibility Study	\$ 72,100		
<u>Willow Road Stormwater Tunnel Improvements</u>			
North Willow, South Willow, & Provident		\$ 27,969,048	
Cherry Street Outlet Area		\$ 2,000,000	
Winnetka Underpass Area		\$ 4,400,000	
Area F (west of Hibbard Road)		***	(Currently under study by CBBEL)
<u>B&amp;W Recommended Improvements</u>			
Area A (Pine Tree/Asbury Area)		\$ 500,000	
Area C (Hubbard Woods Area)		\$ 1,700,000	
Area E (Boal/Heather/Hickory/Sumac Area)		\$ 900,000	
Area G (Tower to Pine Area)		\$ 2,000,000	
Area N (Appletree/Broadmeadow Area)		\$ 1,200,000	
Area O (West Elm/Green Bay Area)		\$ 1,800,000	
<b>TOTALS</b>	<b>\$ 6,751,883</b>	<b>\$ 34,369,048</b>	<b>\$ 8,100,000 \$49,220,931</b>

When these remaining, future, projects are added to the previously planned project, the resulting long-term stormwater management program to reduce the risk of flooding for susceptible areas throughout the entire Village rises to approximately \$49.2 million. While CBBEL’s study of Area F is not complete, it is anticipated based on preliminary results that B&W’s proposed Area G improvements will address the bulk of Area F flooding, and additional investment in Area F will be limited to local grading and inlet improvements.

There are some specific next steps that the Village Council can take at this time. First, the Council could direct staff to procure the necessary additional detailed topographic survey for Area N recommended by B&W to identify grading improvements or enhancements to overland flow routes to reduce the risk of structure flooding in this drainage area. This additional topographic surveying is anticipated to cost approximately \$10,000 and can be completed within 30 to 45 days (weather permitting).

Second, the Council could discuss and provide direction on how to determine which of the proposed improvements should be retained for further consideration in the Stormwater Master Plan and the Stormwater Utility Feasibility Study. For example,

Municipal Financial Services Group could be directed to include the \$8.1 million associated with the recommended improvements for these six areas in the financial models being prepared for the Stormwater Utility Feasibility and Financing Study currently underway. The results of this analysis, and subsequent discussions, could be useful in determining timing and sequencing of projects based on funding parameters such as revenue generation expectations, bonding limitations, cash flow, etc.

The Council could also consider directing staff to identify a proposed scope of work and probable cost to procure a more formal cost-benefit analysis for some or all of the improvements to determine the relative value, need, and sequencing of the improvements.

**Recommendation:**

Review **B&W Flood Risk Reduction Assessment – Additional Study Areas** and provide policy direction. Possible actions for consideration follow:

1. Consider directing staff to procure additional detailed topographic survey for Area N to identify potential grading and overland flow route improvements to reduce the risk of structure flooding, in lieu of the modeled improvements estimated to cost \$1.2 million;
2. Discuss and provide direction on how to determine which of the proposed improvements should be retained for further consideration in the Stormwater Master Plan and the Stormwater Utility Feasibility Study;
  - Direct MFSG to include some or all of the proposed \$8.1 million in improvements in one of their capital construction financial model to provide an understanding of the financial implications of constructing all improvements?
  - Direct staff to provide further information on the possible cost and scope of a cost-benefit evaluation of some or all of the projects proposed and under consideration?

**Attachments:**

1. Flood Risk Reduction Assessment Report and Exhibits

**ATTACHMENT #1**

**FLOOD RISK REDUCTION ASSESSMENT – ADDITIONAL  
STUDY AREAS**

Village of  
**WINNETKA**



**Flood Risk  
Reduction  
Assessment -  
Additional  
Study Areas**

**Prepared by:**

**Baxter & Woodman, Inc.**

**8678 Ridgefield Rd.**

**Crystal Lake, IL 60012**

**815.459.1260**

**[www.baxterwoodman.com](http://www.baxterwoodman.com)**

# Village of Winnetka, Illinois Flood Risk Reduction Assessment – Additional Study Areas

## TABLE OF CONTENTS

<u>Section</u>	<u>Page No.</u>
EXECUTIVE SUMMARY	
1. INTRODUCTION	1-1
1.1 Purpose and Scope	1-1
2. METHODOLOGY	2-1
3. FLOOD RISK REDUCTION ASSESSMENT	3-1
3.1 Area A Existing Conditions	3-1
3.2 Area A Proposed Conditions	3-2
3.3 Area C Existing Conditions	3-4
3.4 Area C Proposed Conditions	3-5
3.4.1 Alternate 1 – Disconnect from MWRD	3-6
3.4.2 Alternate 2 – Maintain Connection to MWRD	3-7
3.5 Area E Existing Conditions	3-8
3.6 Area E Proposed Conditions	3-9
3.7 Area G Existing Conditions	3-12
3.8 Area G Proposed Conditions	3-13
3.9 Area N Existing Conditions	3-14
3.10 Area N Proposed Conditions	3-16
3.11 Area O Existing Conditions	3-17
3.12 Area O Proposed Conditions	3-18
3.12.1 Alternate 1 – Disconnect from MWRD	3-19
3.12.2 Alternate 2 – Maintain Connection to MWRD	3-20
4. CONCLUSIONS AND RECOMMENDATIONS	4-1

## LIST OF TABLES

<u>Table</u>	<u>Page No.</u>
1 Engineer’s Estimate of Probable Cost Summary by Study Area	4-1

## LIST OF FIGURES

<u>Figure</u>		<u>Page No.</u>
1	Drainage Areas Map	1-2
2	Study Area A	3-1
3	Study Area C	3-4
4	Study Area E	3-8
5	Study Area G	3-12
6	Study Area N	3-14
7	Study Area O	3-17

## LIST OF APPENDICES

### Appendix

1. Area A Engineer's Estimate of Probable Cost
- 2A. Area C Engineer's Estimate of Probable Cost – Alternate 1
- 2B. Area C Engineer's Estimate of Probable Cost – Alternate 2
3. Area E Engineer's Estimate of Probable Cost
4. Area G Engineer's Estimate of Probable Cost
5. Area N Engineer's Estimate of Probable Cost
- 6A. Area O Engineer's Estimate of Probable Cost – Alternate 1
- 6B. Area O Engineer's Estimate of Probable Cost – Alternate 2

## LIST OF EXHIBITS

### Exhibit

1. Drainage Areas Map
2. Area A Proposed Conditions
- 3A. Area C Proposed Conditions – Alternate 1
- 3B. Area C Proposed Conditions – Alternate 2
4. Area E Proposed Conditions
5. Area G Proposed Conditions
6. Area N Proposed Conditions
- 7A. Area O Proposed Conditions – Alternate 1
- 7B. Area O Proposed Conditions – Alternate 2

## **EXECUTIVE SUMMARY**

This Flood Risk Reduction Assessment, prepared by Baxter & Woodman Consulting Engineers, presents recommendations to mitigate flood damage in six areas of the Village which were not included in the previous Assessments completed by Christopher B. Burke Engineering, Ltd. Flooding in these “Additional Study Areas” consists primarily of standing water and overland flow in streets and yards. This nuisance flooding most commonly results in sewer back-ups, basement seepage, and sump pump failures, although several cases of overland flow into structures have also been reported. Recommendations for each study area are summarized below, along with the Engineer’s Opinion of Probable Cost.

### **Study Area A**

The recommended improvements for this area consist of constructing new storm sewers ranging from 24 to 36 inches in place of the existing 12- to 18-inch sewers, along with inlet capacity improvements (Exhibit 2). The Engineer’s Opinion of Probable Cost for these improvements is \$0.5 million.

### **Study Area C**

Potential improvements for this area consist of consist of replacing existing 12- to 36-inch storm sewers with 18- to 48-inch sewers, along with inlet capacity improvements. Two alternatives were presented: disconnection of the Village storm sewer from the MWRD interceptor sewer; and maintaining the connection without increasing the rate of discharge to the interceptor sewer (Exhibits 3A and 3B). The

Engineer's Opinion of Probable Cost for Alternates 1 and 2 are \$1.9 million and \$1.7 million, respectively.

### **Study Area E**

The recommended improvements for this area consist of constructing new storm sewers ranging from 18 to 30 inches in place of the existing 8- to 24-inch sewers, along with inlet capacity improvements (Exhibit 4). The Engineer's Opinion of Probable Cost for these improvements is \$0.9 million.

### **Study Area G**

The recommended improvements for this area consist of constructing new storm sewers ranging from 24 to 48 inches in place of the existing 8- to 30-inch sewers, along with inlet capacity improvements (Exhibit 5). The Engineer's Opinion of Probable Cost for these improvements is \$2.0 million.

### **Study Area N**

Baxter & Woodman developed potential storm sewer improvements for this area; however, the modeled storm sewer improvements in Area N are not recommended, since the modeling demonstrates that the downstream high water surface elevation limits the effectiveness of the potential storm sewer improvements. Instead, the Village should perform a detailed topographic survey of Area N to determine how residences can be protected against overland flooding by making improvements to the overland flow paths.

### **Study Area O**

Potential improvements for this area consist of replacing existing 22- and 24-inch storm sewers with 42- and 48-inch sewers, along with inlet capacity

improvements. Two alternatives were presented: disconnection of the Village storm sewer from the MWRD interceptor sewers; and maintaining the connections without increasing the rate of discharge to the interceptor sewers (Exhibits 7A and 7B). The Engineer's Opinion of Probable Cost for Alternates 1 and 2 are \$2.3 million and \$1.8 million, respectively.

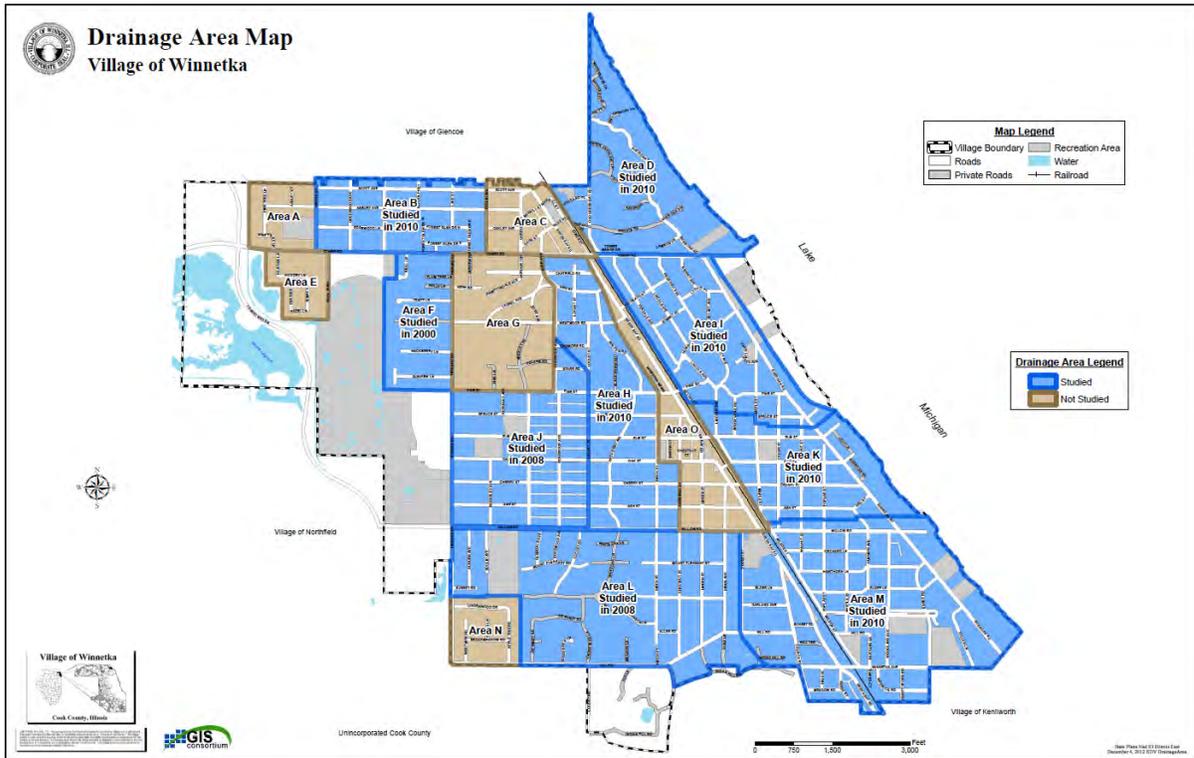
# **1. INTRODUCTION**

## **1.1 Purpose and Scope**

The flood damage resulting from severe storm events in September 2008 and July 2011 devastated the citizens of Winnetka. The Village responded by initiating Flood Risk Reduction Assessments to determine what improvements could be made to mitigate flood damage from future storm events in the areas which have proven to be the most susceptible to flooding. With \$41.1 million of recommended improvements, the Village is now developing a Stormwater Master Plan, which includes prioritization of the planned improvements and development of an implementation strategy for funding the improvements. As a first step in the development of the Stormwater Master Plan, the Village is conducting this Flood Risk Reduction Assessment of the areas within the Village that have yet to be assessed (the “Additional Study Areas”).

The purpose of this Assessment is to recommend improvements that will mitigate flood damage in the Additional Study Areas, which are shown below on Figure 1 and also on Exhibit 1.

**FIGURE 1**  
**Drainage Areas Map**



This Assessment supplements those previously completed by Christopher B. Burke Engineering, Ltd. (CBBEL). For consistency with the planned improvements (CBBEL, October 2011), this Assessment recommends improvements that would provide relief from storms up to and including the 100-year design event.

Flooding in the Additional Study Areas primarily consists of standing water and overland flow in streets and yards. This nuisance flooding most commonly results in sewer back-ups, basement seepage, and sump pump failures. A few cases of overland flow into structures have also been reported. The Village conducted a flooding survey following the July 2011 storm event in which residents reported the incidences and types of flooding they experienced. Figures 2-7 in this report show stormwater flooding results categorized as either “overland flooding” or “other stormwater flooding”.

## **2. METHODOLOGY**

The methodology used in this Assessment is consistent with the methodology used in Flood Risk Reduction Assessments completed by CBBEL in September 2009, June 2011, and October 2011. The following description of hydrologic and hydraulic model development has been included to provide a clear understanding of what data was used to determine the recommended improvements.

Each study area has been delineated with drainage area boundaries defined by the topographic data (1-foot contours) and storm sewer mapping provided by the Village. The Village's detailed storm sewer mapping includes: pipe invert elevations, pipe diameters, pipe lengths, and structure rim elevations. Where necessary data was missing from the storm sewer mapping, the data was field surveyed by Village staff.

Each study area was further divided into sub-areas to which hydrologic parameters, such as the Runoff Curve Number (RCN) and Time of Concentration (Tc), were assigned. The RCN value is based on the ratio of impervious to pervious area within a sub-area. It is a function of the current land use, as determined using aerial photography provided by the Village, and the soil type, as determined using soil data published by the Natural Resources Conservation Service (NRCS). The Tc is the length of time it takes for runoff to travel from the furthest point in the sub-area to the outlet.

After the sub-areas were delineated for each study area, hydrologic and hydraulic data were input into an XP-Software Stormwater and Wastewater Management Model (XP-SWMM). This software is a two-phase dynamic modeling

program that determines the amount of runoff from a storm event and routes the runoff through a sewer network, along overland flow paths and into depressional storage areas, where appropriate. The software generates runoff rates and volumes, along with high water surface elevations, at each node in the model.

The critical storm duration was determined for each study area utilizing Chicago sectional rainfall depths published in the Illinois State Water Survey's *Bulletin 70*. *Bulletin 70* is the preeminent source for rainfall depths and patterns in Northeast Illinois. The critical storm duration refers to the storm duration that produces the maximum runoff rate or water surface elevation for a storm with a given recurrence interval. For example, the critical duration for the 100-year storm event could be a storm with a 1-, 2-, 3-, 6-, 12-, 18-, 24-, or 48-hour duration. For areas, such as the Additional Study Areas, that have very little depressional storage and very few stormwater detention basins to slow the rate of runoff, the critical duration tends to be among the shorter duration storm events (1-, 2-, and 3-hour).

The tailwater condition, or the elevation of the water surface immediately downstream of the study area, is an important consideration for a storm sewer system model. If the study area drains to a sewer that is at or exceeding its capacity, it can impose a limit on the capacity of the sewers within the study area. Similarly, the capacity of the sewers within the study area can be limited when they discharge to a waterway with a water surface elevation above the outlet from the study area. For this Assessment, wherever the outlet of an Additional Study Area is connected to another Village storm sewer, the model of the Additional Study Area was added to the model of the downstream sewer so a variable tailwater condition is built into the model.

Wherever the outlet of an Additional Study Area is connected to a MWRD interceptor sewer, a constant tailwater elevation was assumed at the crown of the downstream interceptor sewer. Where the outlet of an Additional Study Area discharges to a waterway, a constant tailwater elevation was assumed at an elevation between the normal water level and the 100-year high water surface elevation.

Neighborhood sized storm sewer networks typically have a relatively short Tc, meaning that the peak discharge from the storm sewer system occurs a short time after the beginning of the storm event. The larger the watershed of the receiving water, the longer it takes for the waterway to reach its peak discharge and corresponding high water level. Therefore, the peak discharge from a neighborhood sized storm sewer system is not likely to coincide with the high water surface elevation of the receiving water. For this reason, the 100-year storm sewer improvements were modeled with a tailwater elevation less than the 100-year high water surface elevation. In cases where the performance of the drainage system in a study area was particularly sensitive to the tailwater elevation, a range of tailwater elevations were tested and the result of this sensitivity analysis are included in this Assessment. It is important to note that later in a storm event, when the rate of discharge from the storm sewer system is receding and the water surface elevation in the receiving water continues to rise, low-lying inlets can be flooded by the waterway backing up into the storm sewer system, unless the system is protected by a flap gate or check valve.

Modeling of the Additional Study Areas was an iterative process. During each iteration, model results were compared with data collected in the resident flooding survey and with input from Village staff familiar with flooding in the Additional Study

**Areas. It should be noted that shallow flooding in the streets was widespread throughout the Additional Study Areas for the 100-year storm event. The flooding problem areas identified in each study area should be understood as those areas with the most severe flooding.**

Once the models of each study area were determined to be sufficiently representative of the existing conditions, the models were then used to analyze potential improvements, including increased storm sewer sizes and increased inlet capacity. Stormwater detention was also considered preliminarily, but the only suitable locations would likely require underground storage vaults and the cost of these structures was found to outweighs the benefits.

Conceptual improvements were modeled in order to reduce flooding in the problem areas to an acceptable level. An acceptable level of flooding was generally considered to be a depth of less than five inches above the street. In cases where the ground elevation adjacent to a residence appeared to be less than one foot above the rim of a storm sewer inlet in a problem area, reasonable efforts were made to reduce the depth of street flooding to less than five inches.

During the course of our analysis, we determined that the improvements necessary to provide 100-year flood protection typically required an increase of only one or two pipe sizes. Consequently, there would be little or no value to the Village in considering 10-, 25- or 50-year improvements for the Additional Study Areas.

This Assessment was based on conceptual plans and limited information. Because of this, there are many unknowns (i.e. soil conditions, utility conflicts and limited rights-of-way) that will affect the ultimate design and the project cost. In order

to account for these uncertainties, the engineer's estimate of probable cost includes a 20 percent contingency. Costs for permitting, design engineering, and construction engineering are included with the recommended improvements as a percentage of the construction cost.

The following sections of this report have been organized by study area. Each section describes the existing and proposed conditions in detail and provides the engineer's estimate of probable cost for the recommended improvements.

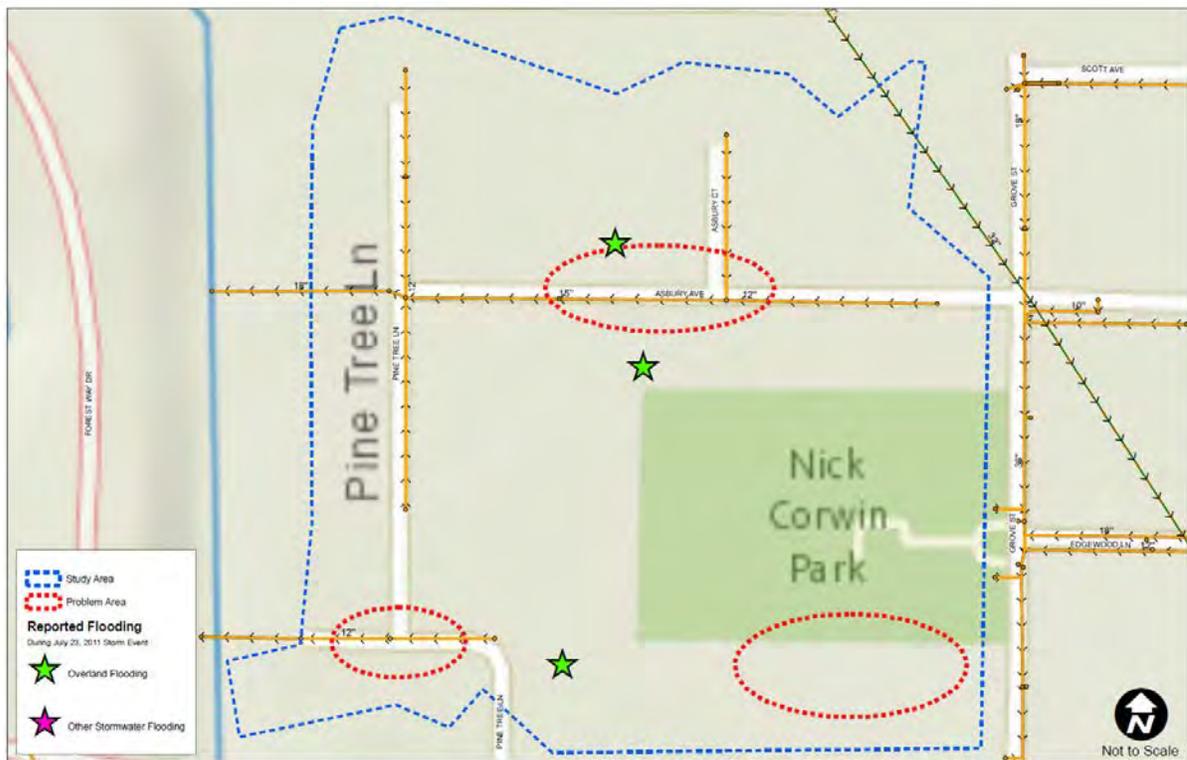
# 3. FLOOD RISK REDUCTION ASSESSMENT

## 3.1 Area A Existing Conditions

Area A is comprised of single-family residences and Nick Corwin Park, which is owned by the Winnetka Park District. It is bounded roughly by Grove Street on the east, Tower Road on the south, the lots south of Ivy Lane on the north, and the East Diversion Ditch on the west, as shown in Figure 2 below.

FIGURE 2

Study Area A



The area has two outlets to the East Diversion Ditch: a 12-inch pipe draining the south end of Pine Tree Lane; and a 18-inch pipe draining the north end of Pine Tree

Lane, Asbury Avenue, and Asbury Court. All of the existing storm sewers within Area A are between 12 and 18 inches in diameter.

The lowest points within Area A are located: at the west bend in Pine Tree Lane, near the intersection of Asbury Avenue with Asbury Court, and in a depressional storage area at the southeast corner of Nick Corwin Park. Three property owners within the area reported flooding due to overland flow resulting from the July 2011 storm event. Two of these properties are located near the intersection of Asbury Avenue with Asbury Court. The other is located just east of the problem area along Pine Tree Lane. The depressional storage area in Nick Corwin Park is considered a problem area because the calculated 100-year high water surface elevation (625.5) is higher than the ground elevation adjacent to a residence along the overland flow path to the south. This means that the residence may be at risk of overland flooding.

The residences in Area A are above the 100-year flood elevation of the East Diversion Ditch, but the rising water level in the ditch creates an adverse tailwater effect on the storm sewer outlets. This reduces the capacity of the storm sewer system and results in street flooding. This street flooding is the likely source of the overland flow that flooded residences during the July 2011 storm.

### **3.2 Area A Proposed Conditions**

The street flooding problems in Area A can be alleviated by constructing new, larger storm sewers in place of the existing storm sewers. The new sewers would range from 24 to 36 inches, and be installed in place of the existing sewers, as shown on Exhibit 2. Additional inlet capacity will also be needed to capture the 100-year runoff in these sewers. The increased storm sewer capacity will increase the peak discharge to

the East Diversion Ditch from Area, but the increase in stormwater runoff (10 cfs) will not create flooding problems downstream. The increase in stormwater runoff from Area A represents only 2 percent of the peak flow through the ditch, which is negligible.

Since the 100-year high water elevation of the East Diversion Ditch will approach the rim elevations of drainage structures in the lowest points of Area A (after the area is mostly drained), we recommend fitting the new outlets with flap gates or Tideflex check valves. These will help prevent the ditch from backing up into the storm sewer system and flooding the steets.

The West Tower Road Storm Sewer Improvements are currently under design and they include increased sewer capacity along Grove Street. The flooding problem in Nick Corwin Park can be alleviated by installing a new 12-inch storm sewer to drain the depressional storage area to the storm sewer improvements along Grove Street. CBBEL is designing the West Tower Road Storm Sewer Improvements and has confirmed that the planned sewer improvements will have sufficient capacity to drain the depression.

The total cost of these improvements, including permitting with the U.S. Army Corps of Engineers (USACE) for the new outlets, along with design and construction engineering, is estimated to be \$493,408. A detailed calculation of this cost is included as Appendix 1.

One alternative to the recommended improvements was considered, which involved reversing the flow of drainage along Asbury Avenue so that new storm sewers would connect to the planned storm sewer improvements along Grove Street. CBBEL modeled this alternative with the model for their West Tower Road Storm Sewer

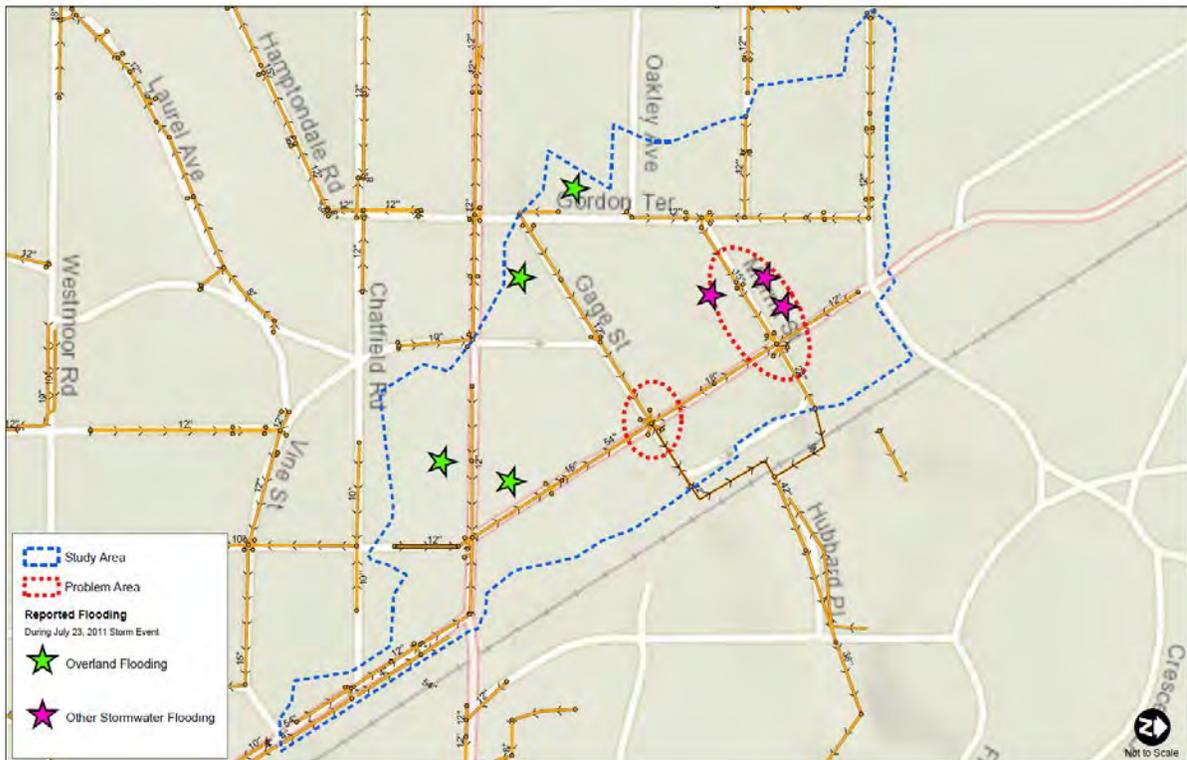
Improvements and determined that the planned sewer improvements cannot accommodate this additional drainage.

### 3.3 Area C Existing Conditions

Area C is a section of downtown Winnetka between the Union Pacific Railroad on the east, Chatfield Road on the south, Euclid Avenue on the west, and Scott Avenue on the north. Land uses within the area consist mainly of stores and offices, with a number of single-family residences on the west and south. The Hubbard Woods commuter rail station and its parking lot are located on the east side of Area C, immediately adjacent to Hubbard Woods Park. This area is shown in Figure 3 below.

**FIGURE 3**

**Study Area C**



Existing storm sewers ranging from 12 to 36 inches drain the northern portion of Area C across the railroad into the Ravine Area, to a storm sewer that discharges into Lake Michigan. The southern portion of Area C is connected to the MWRD interceptor sewer at the intersection of Gage Street and Green Bay Road. From this location, the interceptor sewer runs southeast along Green Bay Road. This connection of the Village storm sewer system to the interceptor sewer is a permitted connection that became necessary when storm sewers to the east were cut-off by the railroad grade separation project in the 1930s.

The lowest points in Area C are located: along Merrill Street, mid-way between Gordon Terrace and Green Bay Road; and at the intersection of Gage Street with Green Bay Road. The Area C model shows significant flooding in both of these locations (1.0-foot and 0.7-foot inundation depths, respectively).

The owners of seven properties within Area C reported flooding due to the July 2011 storm event. Three of these properties are adjacent to the problem area along Merrill Street. The other four properties are scattered along the west and south boundaries of the study area. The reported types of flooding for these seven properties range from basement seepage and sump pump failure to four instances of overland flow into structures.

### **3.4 Area C Proposed Conditions**

The MWRD may require the disconnection of any improvements made to storm sewers which connect to an interceptor sewer. Therefore, two alternatives were modeled for Area C. Alternative 1 disconnects the Village storm sewer system from the MWRD interceptor sewer. In this alternative, the existing connection to the interceptor

sewer would be abandoned and all the stormwater draining to the intersection of Gage Street and Green Bay Road would be routed northwest along Green Bay Road to Merrill Street, where it would drain across the railroad into the Ravine Area and ultimately to Lake Michigan. Alternate 2 would maintain the existing connection to the interceptor sewer, but would not increase the rate of discharge to the interceptor sewer beyond the current level.

**3.4.1 Alternate 1 - Disconnect from MWRD** - The 100-year peak flows from Area C can be accommodated in a network of new storm sewers ranging in size from 18- to 48 inches, along with significant improvements to inlet capacity. The railroad crossing and connection to the Ravine Area storm sewer is shown on Exhibit 3A. The proposed conditions for Area C were modeled with the planned improvements in the Ravine Study Area. The existing storm sewer discharging to Lake Michigan has sufficient capacity for the planned relief sewer along Old Green Bay Road and the increased runoff resulting from the Area C improvements. These improvements re-route some of the storm sewers within Area C so that improvements are needed to only one crossing of the railroad (the storm sewer draining Merrill Street). The other crossing (which drains Gage Street east of Tower Court) can be abandoned. Re-routing all runoff from Area C into one sewer requires 42-inch and 48-inch storm sewers along Green Bay Road and the east end of Merrill Street, but the cost of an additional railroad crossing would be much greater than the incremental cost of the larger storm sewer required to re-route stormwater from the Gage Street crossing.

Union Pacific is likely to require the Village to minimize construction disturbance within railroad right-of-way. Therefore, new sewers within the right-of-way will almost certainly have to be installed using trenchless methods.

The total cost of these improvements, including permitting with IDOT, Union Pacific and the MWRD, along with design and construction engineering, is estimated to be \$1,913,278. A detailed calculation of this cost is included as Appendix 2A.

**3.4.2 Alternate 2 - Maintain Connection to MWRD** - If the existing connection to the MWRD interceptor sewer is maintained without increasing the rate of discharge to the interceptor sewer, the 100-year peak flows from Area C can be accommodated in a network of new storm sewers ranging in size from 18- to 42 inches, along with significant improvements to inlet capacity as shown on Exhibit 3B. By maintaining the connection to the interceptor sewer at the intersection of Gage Street with Green Bay Road, the storm sewer along Green Bay Road northwest of Gage Street can be reduced from 42-inch and 48-inch (Alternate 1) down to 24-inch and 30-inch. Furthermore, the storm sewer along Merrill Street northeast of Green Bay Road to the connection in the Ravine Area can be reduced from a 48-inch sewer (Alternate 1) down to a 42-inch sewer. All other aspects of Alternate 2 remain unchanged from Alternate 1.

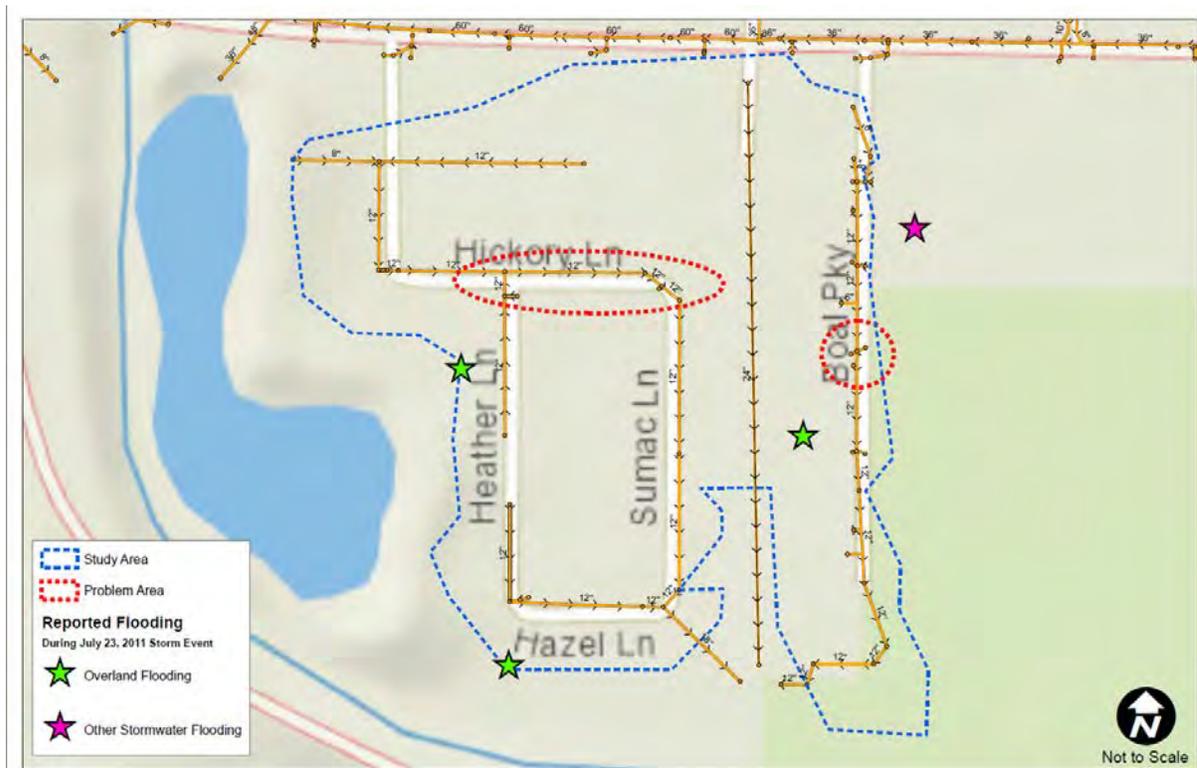
The total cost of these improvements, including permitting with IDOT, Union Pacific and the MWRD, along with design and construction engineering, is estimated to be \$1,668,341. A detailed calculation of this cost is included as Appendix 2B.

### 3.5 Area E Existing Conditions

Area E is a residential neighborhood bounded by Tower Road on the north, Forestway Drive on the west and south, and the Winnetka Golf Club on the east. This area is shown in Figure 4.

FIGURE 4

#### Study Area E



The study area is drained by three outlets to the East Diversion Ditch: an 18-inch pipe draining Heather, Hickory, Sumac, and Hazel Lanes; a 24-inch pipe running through rear yards of properties along Boal Parkway and Sumac Lane; and a 12-inch pipe carrying the drainage from Boal Parkway. The existing storm sewers within Area E range in size from 8 to 24 inches in diameter. The 24-inch outlet may have drained Nick Corwin Park at some point in the past, but the pipeline has since been severed at

Tower Road. The sewer currently only serves to drain the rear yards directly above it, as several residents have connected area drains to it.

The lowest points within Area E are located at the south end of Boal Parkway and in several undrained depressions southwest of the intersection of Boal Parkway and Tower Road. Four property owners within the area reported flooding resulting from the July 2011 storm event. Two of these properties are adjacent to the problem area along Boal Parkway and one is adjacent to the problem area along Hickory Lane. The reported types of flooding for these four properties include basement seepage, sump pump failure and overland flow into three of the structures.

Most of the residences along Heather, Hickory, Sumac and Hazel Lanes are elevated above the 100-year flood elevation (625.5, according to the MWRD Inundation Area Maps for Cook County), but all of the residences along Boal Parkway appear to be within the 100-year floodplain. When the water surface in the East Diversion Ditch rises, an adverse tailwater condition is created at the three outlets from Area C. This reduces the capacity of the storm sewer system, which results in street flooding.

### **3.6 Area E Proposed Conditions**

Recommended improvements for Area E include increasing the storm sewer and inlet capacity, as shown on Exhibit 4. The existing 12- and 18-inch pipes along Sumac and Hickory Lanes should be replaced with 18- to 30-inch pipes. The existing 12-inch pipes along the south end of Boal Parkway should be replaced with 18- to 24-inch pipes. Adding inlet capacity will allow the proposed storm sewer system to take full advantage of the increased sewer capacity. The increased storm sewer capacity will increase the peak discharge to the East Diversion Ditch from Area C, but the increase in stormwater

runoff (15 cfs) will not create flooding problems downstream. The increase in stormwater runoff from Area C represents only 3 percent of the peak flow through the ditch, which is negligible.

At first glance, it appears that the existing depressions located southwest of the intersection of Boal Parkway and Tower Road should be drained either to the planned storm sewer improvements along West Tower Road or to the existing 24-inch storm sewer running through the rear yards of properties along Boal Parkway and Sumac Lane. However, draining the depressions to either potential outlet would hydraulically connect the depressions with a sewer or a waterway, and would result in greater depths of flooding within the depressions.

It should be noted that the storm sewer system along Boal Parkway is very sensitive to the tailwater elevation at the outlet. This sensitivity indicates that the benefits of the recommended improvements will be muted when the East Diversion Ditch crests after a significant rainfall. This is due to the ground surface elevation along Boal Parkway, which is relatively low compared to flood stages of the East Diversion Ditch.

It is a generally accepted practice to model a neighborhood sized storm sewer system that discharges to a waterway having a large tributary area, by setting the tailwater on the storm sewer outlet at the 10-year high water surface elevation of the waterway. When an approximation of the 10-year high water surface elevation of the East Diversion Ditch was set as the tailwater elevation at the outlet from the Boal Parkway storm sewer system, the southern end of storm sewer system was submerged with backwater from the East Diversion Ditch. Therefore, the recommended

improvements along Boal Parkway were analyzed with a range of tailwater elevations up to and including an approximation of the 10-year high water surface elevation. The results of this sensitivity analysis demonstrate that the recommended improvements would be very effective with lower tailwater elevations, but less effective under higher tailwater conditions.

Since the 100-year high water elevation of the East Diversion Ditch approaches (even exceeds in some cases) the rim elevations of drainage structures in Area E, we recommend fitting the new outlets with flap gates or Tideflex check valves. These will help prevent the ditch from backing up into the storm sewer system and flooding the streets.

The total cost of these improvements, including permitting with the USACE for the two new outlets, along with design and construction engineering, is estimated to be \$862,755. A detailed calculation of this cost is included as Appendix 3.

One alternative to the recommended improvements was considered, which involved discharging the runoff from Heather, Hickory, Sumac, and Hazel Lanes west to the Forest Preserve Lagoon, rather than southeast to the East Diversion Ditch. Once it became clear that the tailwater elevation on a potential outlet to the lagoon would essentially match the tailwater elevation of the existing outlet to the East Diversion Ditch, there was no longer any benefit with which to justify the increased cost of piping for this alternative.

### 3.7 Area G Existing Conditions

Area G is comprised almost exclusively of single-family residences. It is bounded roughly by Tower Road on the north, Hibbard Road on the west, Pine Street on the south, and on the east by Ardsley Road and Burr Avenue, as shown in Figure 5 below.

FIGURE 5

Study Area G



This area currently drains to the existing 30-inch storm sewer running south along the west side of Hibbard Road; however, the planned Lake Michigan Outlet includes the installation of an 84-inch storm sewer along Hibbard Road, between Pine Street and Oak Street. It is anticipated that the Lake Michigan Outlet would be constructed prior to any improvements in Area G, so the Existing Conditions model includes the planned 84-inch storm sewer along Hibbard Road.

Within Area G, the storm sewer sizes range from 8 inches to 30 inches. The main line runs along Hibbard Road and there are three major branches from the main line along Hibbard Road. The north branch collects runoff from Hamptondale Avenue, along with Chatfield, Auburn, and Kent Roads. The central branch collects runoff from Westmoor Road and Laurel Avenue. The south branch collects runoff from Pine Street and Ardsley Road.

Area G slopes steeply from east to west, so the lowest points in the area are along Hibbard Road. Seventeen property owners within the area reported flooding resulting from the July 2011 storm event. The types of flooding reported varied, but the most common types of flooding were basement seepage and sump pump failure. Five of the seventeen properties reported flooding due to overland flow and these properties are scattered across the study area.

### **3.8 Area G Proposed Conditions**

The street flooding problems in Area G can be alleviated by installing new, larger storm sewers in place of the existing storm sewers. The new sewers would range in size from 24 inches to 48 inches and be installed in place of the existing sewers, as shown on Exhibit 5. Additional inlet capacity will also be needed in a few critical locations.

The proposed improvements would increase the peak discharge from Area G, but the additional runoff would not exceed the capacity of the planned 84-inch storm sewer along Hibbard Road.

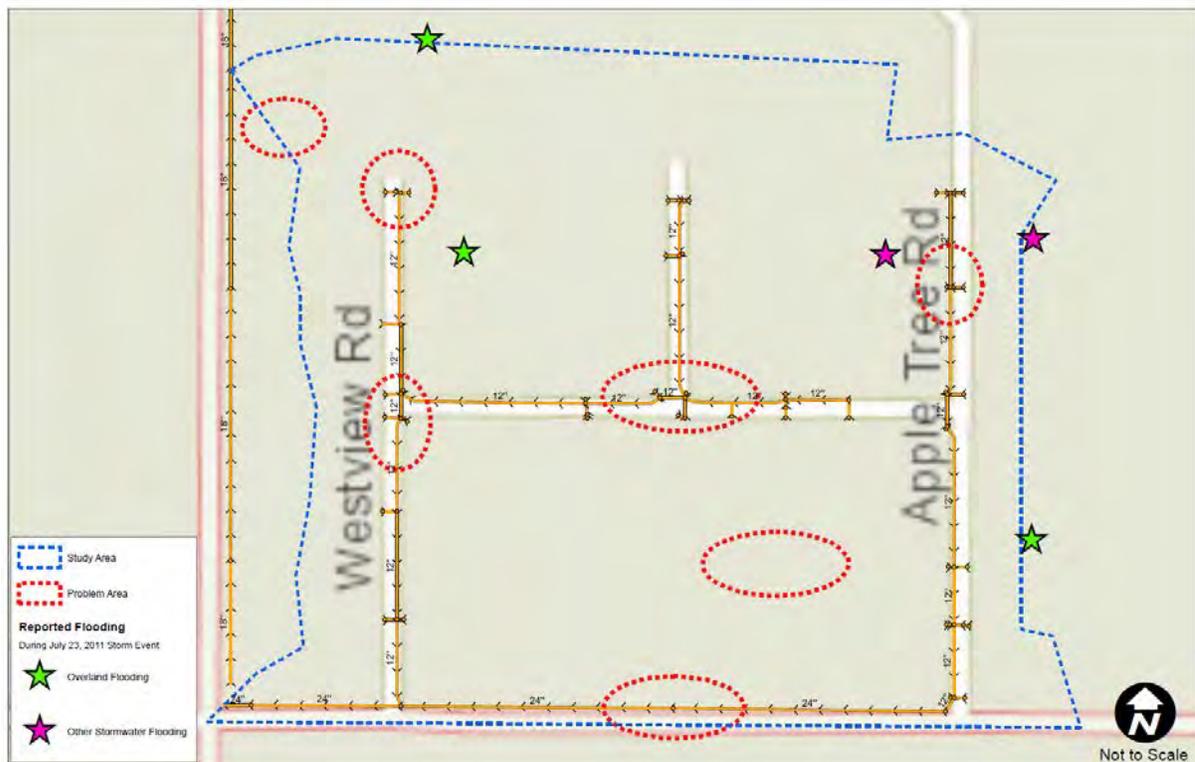
The cost of the improvements recommended for Area G, including design and construction engineering is estimated to be \$1,961,270. A detailed calculation of this cost is included as Appendix 4.

### 3.9 Area N Existing Conditions

Area N is a neighborhood of single-family homes in the southwest corner of the Village, bounded by Hill Road on the south, Hibbard Road on the west, Lindenwood Drive on the north, and Apple Tree Road on the east, as shown in Figure 6 below.

**FIGURE 6**

**Study Area N**



The area is served by sewers ranging from 12- to 24 inches in diameter. The 24-inch outlet receives flow from all of the existing sewers in Area N and discharges at the

northwest corner of Hibbard Road and Hill Road to a channel which travels through property owned by the Forest Preserve District of Cook County (FPDCC).

The lowest point in Area N is an undrained sideyard depression at the northwest corner of the study area. Another undrained depression exists in the rear yards of the properties located north of Hill Road and south of Broadmeadow Road. These depressional storage areas are considered problem areas because the calculated 100-year high water surface elevations (623.6 and 624.3, respectively) are higher than the ground elevation adjacent to residences along the overland flow path. This means that the residences may be at risk of overland flooding. The streets in Area N are generally low and very flat so street flooding is a significant concern in this study area.

The owners of five properties within Area N reported flooding due to the July 2011 storm event. Two of these properties are adjacent to the problem area along Apple Tree Road and one is adjacent to the problem area at the north end of Westview Road. The reported types of flooding for the five properties include basement seepage, sump pump failure and overland flow into three of the structures.

Nearly all of Area N is mapped within the 100-year floodplain, but Area N is protected from the Skokie River floodwaters by a levee and a pumping station northwest of the intersection of Hibbard Road and Hill Road. Planned improvements to the pumping station and the Lake Michigan Outlet would both act to lower the tailwater elevation at the Area N outlet. It is anticipated that these improvements would be completed prior to any improvements in Area N, so the Existing Conditions tailwater assumes that the capacity of the pumping station has been increased and that the Lake Michigan Outlet has been constructed.

### **3.10 Area N Proposed Conditions**

Even with the planned improvements to the pumping station and the planned Lake Michigan Outlet, the storm sewer system in Area N is still very sensitive to the tailwater elevation, due to the low ground surface elevations throughout the neighborhood. The timing of the 100-year high water surface elevation at the pumping station is not likely to be significantly offset from the timing of the peak discharge from Area N. Therefore, the tailwater elevation at the outlet from Area N was set at the 100-year high water surface elevation of the pumping station (assuming construction of the planned pumping station improvements and the Lake Michigan Outlet). Under this tailwater condition, the effectiveness of the modeled improvements is limited since many of the inlets in Area N are less than less than 2-1/2 feet above the tailwater elevation. A sensitivity analysis demonstrates that the 100-year high water surface elevation at the pumping station would have to be reduced even further (from 620.8 to approximately 617.7) for the modeled improvements to be effective.

Modeled improvements for Area N included increasing the storm sewer sizes from 12- and 24-inch pipes to 18- and 36-inch pipes, as well as increasing inlet capacity, as shown on Exhibit 6. The total cost of these improvements, including permitting with the USACE, FPDCC, and Cook County Highway Department, along with design and construction engineering, is estimated to be \$1,168,115. A detailed calculation of this cost is included as Appendix 5.

Since the storm sewer capacity in Area N is limited by the tailwater to such a great extent, improvements to the overland flow paths would be much more effective for flood risk reduction than storm sewer improvements. A review of the Village topography indicates that when stormwater rises to elevations slightly higher than 623,

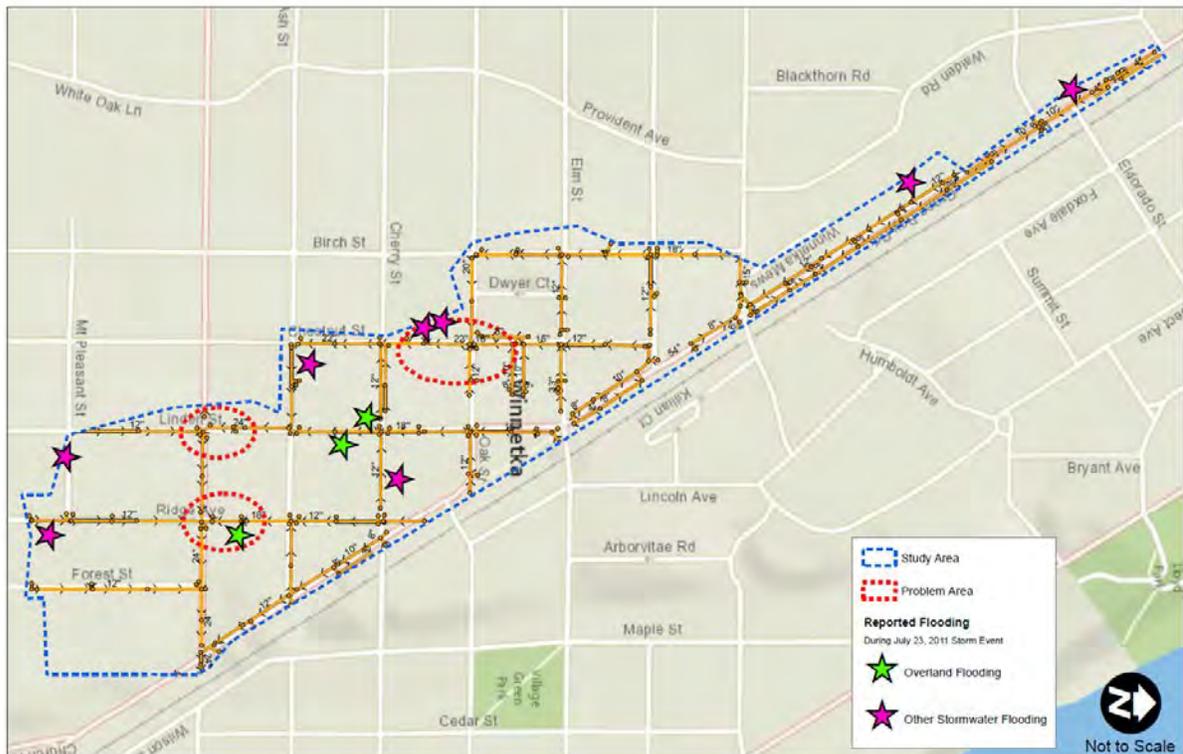
it flows overland along streets and through side yards to the Hibbard Road and Hill Road rights-of-way. Several residences along the overland flow path have adjacent ground at or very near elevation 623 and may be at risk of overland flooding. To protect these properties, the Village could perform a detailed topographic survey of Area N to determine where the overland flow paths may be hindered.

**3.11 Area O Existing Conditions**

Area O is located south of Area C, along the Union Pacific Railroad. This area includes offices and stores, multi- and single-family dwellings, the Winnetka commuter rail station, and the North Shore Country Day School. It is drained by sewers ranging from 8 inches to 33 inches in diameter, and includes two permitted connections to the MWRD interceptor sewer along Green Bay Road. Area O is shown in Figure 7 below.

**FIGURE 7**

**Study Area O**



Nearly all of Area O drains to the south interceptor sewer connection at the intersection of Willow Road and Green Bay Road. The north connection to the interceptor sewer is located at the intersection of Pine Street and Green Bay Road. Only the portion of Area O in the immediate vicinity of that intersection and the area further north drains to the north connection.

The lowest point in Area O occurs at the intersection of Willow Road and Green Bay Road, but that location is not considered a problem area. The owners of eleven properties within Area O reported flooding due to the July 2011 storm event. Two of these properties are adjacent to a problem area near the intersection of Chestnut Street and Oak Street. Another property is adjacent to a problem area at the intersection of Ridge Avenue and Willow Road. The rest of the properties are scattered throughout the Area O. The reported types of flooding for these eleven properties range from basement seepage and sump pump failure to several instances of overland flow into structures.

### **3.12 Area O Proposed Conditions**

The MWRD may require the disconnection of any improvements made to storm sewers which connect to an interceptor sewer. Therefore, two alternatives were modeled for Area O. Alternate 1 disconnects the Village storm sewer system from the MWRD interceptor sewer both locations. Alternate 2 would maintain the existing connections to the interceptor sewer, but would not increase the rate of discharge to the interceptor sewer beyond the current level.

The planned Lake Michigan Outlet (CBBEL, October 2011) involves the installation of an 96-inch storm sewer along Willow Road between Glendale Road and

Lake Michigan. It is anticipated that the Lake Michigan Outlet would be constructed prior to any improvements in Area O, so the Existing Conditions model includes the planned 96-inch storm sewer along Willow Road.

**3.12.1 Alternate 1 - Disconnect from MWRD** - In this alternate, a new drop shaft would be installed at the intersection of Willow Road and Green Bay Road to facilitate disconnection from the south interceptor connection. Also in this alternate, the north connection to the interceptor sewer would be abandoned and all the stormwater draining to the intersection of Pine Street and Green Bay Road would be routed west along Pine Street to the planned 48-inch storm sewer along Provident Avenue. This is shown on Exhibit 7A. No modifications to the conceptual Provident Avenue storm sewer would be necessary to implement this alternate.

The 100-year peak flows from the problem area near the intersection of Chestnut Street and Oak Street can be accommodated by increasing storm sewer sizes along Chestnut Street from 22 and 24 inches to 42 and 48 inches. Since the planned Lake Michigan Outlet would be tunneled between Birch Street and Poplar Street without any intermediate drop structures, the proposed storm sewer running south along Chestnut Street would turn west at Ash Street and then south along Birch Street to connect at the drop structure.

The problem areas near the intersections of Linden Street and Ridge Avenue with Willow Road are similar to each other in that both occur at a low point in the street where adjacent residences can be damaged by overland flow at very shallow depths of street flooding. In both locations, the existing pipe size should be increased and inlet capacity should also be increased to protect the adjacent residences.

The total cost of these improvements, including permitting with MWRD, along with design and construction engineering, is estimated to be \$2,303,475. A detailed calculation of this cost is included as Appendix 6A.

**3.12.2 Alternate 2 - Maintain Connection to MWRD** - If the existing connections to the MWRD interceptor sewer are maintained without increasing the rate of discharge to the interceptor sewer, there is no need for a new drop structure at Willow Road and Green Bay Road, nor is there a need to route stormwater west along Pine Street to the planned 48-inch storm sewer along Provident Avenue. All other aspects of Alternate 2 remain unchanged from Alternate 1. This is shown on Exhibit 7B.

The total cost of these improvements, including permitting with MWRD, along with design and construction engineering, is estimated to be \$1,767,074. A detailed calculation of this cost is included as Appendix 6B.

## **4. CONCLUSIONS AND RECOMMENDATIONS**

The improvements recommended in this Assessment were designed to provide relief from flood damages for the Additional Study Areas for storms up to and including the 100-year design event. Conceptual improvements were modeled in order to reduce surface flooding in the problem areas to an acceptable level and below all known low entry elevations.

**TABLE 1**

**Engineer's Estimate of Probable Cost Summary by Study Area**

<b>Engineer's Estimate of Probable Cost (Millions)</b>	
<b>Study Area</b>	<b>100-year</b>
Area A	\$0.5
Area C - Alternate 2	\$1.7
Area E	\$0.9
Area G	\$2.0
Area N	\$1.2
Area O - Alternate 2	<u>\$1.8</u>
Total =	\$8.1

In Areas C and O, where two alternatives were presented, we recommend maintaining the existing connection to the MWRD interceptor sewer (Alternate 2), if this is allowed by the MWRD. Due to a pending consent decree, the MWRD is currently developing a plan to reduce the frequency of combined sewer overflows. Requiring municipalities to disconnect separate storm sewers from the combined sewer system as a condition of a new Sewerage System Permit may very well be a component of the plan. If that is the case, then Alternative 2 may not be feasible for Areas C and O. If, however, the Village is allowed to maintain the existing connections to the MWRD

interceptor sewers, then this would be the recommended alternative since it would save the Village approximately \$750,000.

Installation of the recommended improvements for Areas G, N, and O should be delayed until other planned improvements, such as the Lake Michigan Outlet and improvements to the pumping station near the intersection of Hibbard Road and Hill Road, have been constructed, since the recommended improvements in Areas G, N, and O are dependent upon the planned improvements.

The modeled storm sewer improvements in Area N are not recommended since the modeling demonstrates that the adverse tailwater condition limits the effectiveness of potential storm sewer improvements. Instead, the Village should perform a detailed topographic survey of Area N to determine how residences can be protected against overland flooding by making improvements to the overland flow paths.





Village of Winnetka  
 Flood Risk Reduction Assessment - Additional Study Areas  
 Appendix 1 - Area A Engineer's Opinion of Probable Cost

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
36" RCP Storm Sewer	Sideyard	0 - 5	282	Foot	\$ 265	\$ 74,730
24" RCP Storm Sewer	Residential Street	5 - 8	663	Foot	\$ 265	\$ 175,695
24" RCP Storm Sewer	Sideyard	0 - 5	144	Foot	\$ 215	\$ 30,960
12" RCP Storm Sewer	Residential Street	0 - 5	64	Foot	\$ 200	\$ 12,800
Inlet	Residential Street	N/A	6	Each	\$ 1,000	\$ 6,000
5' Diameter Manhole	Residential Street	0 - 5	3	Each	\$ 5,000	\$ 15,000
5' Diameter Manhole	Residential Street	5 - 8	3	Each	\$ 5,750	\$ 17,250
36" Flap Valve	N/A	N/A	1	Each	\$ 10,000	\$ 10,000
24" Flap Valve	N/A	N/A	1	Each	\$ 7,500	\$ 7,500

Construction Subtotal		\$ 349,935
Construction Contingency	20%	\$ 69,987
Construction Total		\$ 419,922
Design Engineering	7.5%	\$ 31,494
Construction Observation	7.5%	\$ 31,494
Permitting (USACE)	2.5%	\$ 10,498
<b>Project Total</b>		<b>\$ 493,408</b>

Notes

1. Prices include sanitary sewer and water service relocation/adjustment, trench backfill, pavement or lawn restoration, traffic control, erosion control, construction layout, mobilization
2. Prices do not include right-of-way acquisition, temporary or permanent easements, or relocating other utilities.
3. Prices are current for 2012.



Village of Winnetka  
 Flood Risk Reduction Assessment - Additional Study Areas  
 Appendix 2A - Area C Engineer's Opinion of Probable Cost - Alt 1

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
48" RCP Storm Sewer	Downtown Street	16 - 20	236	Foot	\$ 740	\$ 174,640
48" RCP Storm Sewer	Downtown Street	12 - 16	232	Foot	\$ 665	\$ 154,280
48" RCP Storm Sewer	Parallel to Railroad	12 - 16	230	Foot	\$ 525	\$ 120,750
42" RCP Storm Sewer	Downtown Street	12 - 16	234	Foot	\$ 585	\$ 136,890
30" RCP Storm Sewer	Residential Street	12 - 16	232	Foot	\$ 375	\$ 87,000
30" RCP Storm Sewer	Residential Street	8 - 12	203	Foot	\$ 330	\$ 66,990
24" RCP Storm Sewer	Downtown Street	0 - 5	333	Foot	\$ 320	\$ 106,560
18" RCP Storm Sewer	Residential Street	5 - 8	301	Foot	\$ 245	\$ 73,745
18" RCP Storm Sewer	Residential Street	5 - 8	134	Foot	\$ 245	\$ 32,830
High Capacity Inlet	Downtown Street	N/A	24	Each	\$ 3,250	\$ 78,000
8' Diameter Manhole	Downtown Street	16 - 20	2	Each	\$ 16,000	\$ 32,000
8' Diameter Manhole	Downtown Street	12 - 16	4	Each	\$ 14,500	\$ 58,000
6' Diameter Manhole	Downtown Street	8 - 12	1	Each	\$ 9,500	\$ 9,500
6' Diameter Manhole	Downtown Street	5 - 8	1	Each	\$ 8,500	\$ 8,500
5' Diameter Manhole	Residential Street	5 - 8	2	Each	\$ 5,750	\$ 11,500
Railroad Crossing	N/A	N/A	1	L. Sum	\$ 150,000	\$ 150,000
Connection to Existing	N/A	N/A	1	L. Sum	\$ 50,000	\$ 50,000

Construction Subtotal		\$ 1,351,185
Construction Contingency	20%	\$ 270,237
Construction Total		\$ 1,621,422
Design Engineering	7.5%	\$ 121,607
Construction Observation	7.5%	\$ 121,607
Permitting (IDOT, MWRD, Union Pacific)	3.0%	\$ 48,643
<b>Project Total</b>		<b>\$ 1,913,278</b>

Notes

1. Prices include sanitary sewer and water service relocation/adjustment, trench backfill, pavement or lawn restoration, traffic control, erosion control, construction layout, mobilization
2. Prices do not include right-of-way acquisition, temporary or permanent easements, or relocating other utilities.
3. Prices are current for 2012.



Village of Winnetka  
 Flood Risk Reduction Assessment - Additional Study Areas  
 Appendix 2B - Area C Engineer's Opinion of Probable Cost - Alt 2

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
42" RCP Storm Sewer	Downtown Street	16 - 20	236	Foot	\$ 645	\$ 152,220
30" RCP Storm Sewer	Downtown Street	12 - 16	232	Foot	\$ 475	\$ 110,200
42" RCP Storm Sewer	Parallel to Railroad	12 - 16	230	Foot	\$ 455	\$ 104,650
24" RCP Storm Sewer	Downtown Street	12 - 16	234	Foot	\$ 430	\$ 100,620
30" RCP Storm Sewer	Residential Street	12 - 16	232	Foot	\$ 375	\$ 87,000
30" RCP Storm Sewer	Residential Street	8 - 12	203	Foot	\$ 330	\$ 66,990
24" RCP Storm Sewer	Downtown Street	0 - 5	333	Foot	\$ 320	\$ 106,560
18" RCP Storm Sewer	Residential Street	5 - 8	134	Foot	\$ 245	\$ 32,830
High Capacity Inlet	Downtown Street	N/A	24	Each	\$ 3,250	\$ 78,000
8' Diameter Manhole	Downtown Street	16 - 20	2	Each	\$ 16,000	\$ 32,000
8' Diameter Manhole	Downtown Street	12 - 16	4	Each	\$ 14,500	\$ 58,000
6' Diameter Manhole	Downtown Street	8 - 12	1	Each	\$ 9,500	\$ 9,500
6' Diameter Manhole	Downtown Street	5 - 8	1	Each	\$ 8,500	\$ 8,500
5' Diameter Manhole	Residential Street	5 - 8	2	Each	\$ 5,750	\$ 11,500
Railroad Crossing	N/A	N/A	1	L. Sum	\$ 150,000	\$ 150,000
Connection to Existing	N/A	N/A	1	L. Sum	\$ 50,000	\$ 50,000

Construction Subtotal		\$ 1,158,570
Construction Contingency	20%	\$ 231,714
Construction Total		\$ 1,390,284
Design Engineering	7.5%	\$ 104,271
Construction Observation	7.5%	\$ 104,271
Permitting (IDOT, MWRD, Union Pacific)	5.0%	\$ 69,514
<b>Project Total</b>		<b>\$ 1,668,341</b>

Notes

- Prices include sanitary sewer and water service relocation/adjustment, trench backfill, pavement or lawn restoration, traffic control, erosion control, construction layout, mobilization
- Prices do not include right-of-way acquisition, temporary or permanent easements, or relocating other utilities.
- Prices are current for 2012.



Village of Winnetka  
 Flood Risk Reduction Assessment - Additional Study Areas  
 Appendix 3 - Area E Engineer's Opinion of Probable Cost

**Sumac Lane/Hickory Lane**

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
30" RCP Storm Sewer	Sideyard	5 - 8	220	Foot	\$ 265	\$ 58,300
24" RCP Storm Sewer	Residential Street	5 - 8	643	Foot	\$ 265	\$ 170,395
18" RCP Storm Sewer	Residential Street	5 - 8	288	Foot	\$ 245	\$ 70,560
High Capacity Inlet	N/A	N/A	4	Each	\$ 3,250	\$ 13,000
6' Diameter Manhole	Residential Street	5 - 8	1	Each	\$ 7,000	\$ 7,000
5' Diameter Manhole	Residential Street	5 - 8	4	Each	\$ 5,750	\$ 23,000
30" Flap Valve	N/A	N/A	1	Each	\$ 9,000	\$ 9,000

\$ 351,255

**Boal Parkway**

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
24" RCP Storm Sewer	Sideyard	5 - 8	98	Foot	\$ 240	\$ 23,520
18" RCP Storm Sewer	Residential Street	5 - 8	533	Foot	\$ 245	\$ 130,585
18" RCP Storm Sewer	Sideyard	5 - 8	169	Foot	\$ 225	\$ 38,025
High Capacity Inlet	N/A	N/A	8	Each	\$ 3,250	\$ 26,000
5' Diameter Manhole	Residential Street	5 - 8	7	Each	\$ 5,750	\$ 40,250
24" Flap Valve	N/A	N/A	1	Each	\$ 7,500	\$ 7,500

\$ 265,880

Construction Subtotal		\$ 617,135
Construction Contingency	20%	\$ 123,427
Construction Total		\$ 740,562
Design Engineering	7.5%	\$ 55,542
Construction Observation	7.5%	\$ 55,542
Permitting (USACE)	1.5%	\$ 11,108
<b>Project Total</b>		<b>\$ 862,755</b>

Notes

1. Prices include sanitary sewer and water service relocation/adjustment, trench backfill, pavement or lawn restoration, traffic control, erosion control, construction layout, mobilization
2. Prices do not include right-of-way acquisition, temporary or permanent easements, or relocating other utilities.
3. Prices are current for 2012.



Village of Winnetka  
 Flood Risk Reduction Assessment - Additional Study Areas  
 Appendix 4 - Area G Engineer's Opinion of Probable Cost

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
48" RCP Storm Sewer	Residential Street	12 - 16	287	Foot	\$ 550	\$ 157,850
48" RCP Storm Sewer	Residential Street	8 - 12	1,038	Foot	\$ 480	\$ 498,240
30" RCP Storm Sewer	Residential Street	12 - 16	384	Foot	\$ 375	\$ 144,000
30" RCP Storm Sewer	Residential Street	8 - 12	786	Foot	\$ 330	\$ 259,380
24" RCP Storm Sewer	Residential Street	8 - 12	275	Foot	\$ 295	\$ 81,125
24" RCP Storm Sewer	Residential Street	5 - 8	241	Foot	\$ 265	\$ 63,865
High Capacity Inlet	N/A	N/A	12	Each	\$ 3,250	\$ 39,000
8' Diameter Manhole	Residential Street	12 - 16	5	Each	\$ 12,750	\$ 63,750
8' Diameter Manhole	Residential Street	8 - 12	1	Each	\$ 11,250	\$ 11,250
6' Diameter Manhole	Residential Street	8 - 12	9	Each	\$ 8,000	\$ 72,000
5' Diameter Manhole	Residential Street	5 - 8	1	Each	\$ 5,750	\$ 5,750
Connection to Existing	N/A	N/A	1	L. Sum	\$ 25,000	\$ 25,000

Construction Subtotal		\$ 1,421,210
Construction Contingency	20%	\$ 284,242
Construction Total		\$ 1,705,452
Design Engineering	7.5%	\$ 127,909
Construction Observation	7.5%	\$ 127,909
Permitting	0.0%	\$ -
<b>Project Total</b>		<b>\$ 1,961,270</b>

Notes

1. Prices include sanitary sewer and water service relocation/adjustment, trench backfill, pavement or lawn restoration, traffic control, erosion control, construction layout, mobilization
2. Prices do not include right-of-way acquisition, temporary or permanent easements, or relocating other utilities.
3. Prices are current for 2012.



Village of Winnetka  
 Flood Risk Reduction Assessment - Additional Study Areas  
 Appendix 5 - Area N Engineer's Opinion of Probable Cost

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
36" RCP Storm Sewer	Residential Street	5 - 8	335	Foot	\$ 330	\$ 110,550
30" RCP Storm Sewer	Residential Street	5 - 8	829	Foot	\$ 295	\$ 244,555
24" RCP Storm Sewer	Residential Street	5 - 8	714	Foot	\$ 265	\$ 189,210
24" RCP Storm Sewer	Residential Street	0 - 5	207	Foot	\$ 240	\$ 49,680
18" RCP Storm Sewer	Residential Street	5 - 8	251	Foot	\$ 245	\$ 61,495
18" RCP Storm Sewer	Sideyard	0 - 5	210	Foot	\$ 200	\$ 42,000
15" RCP Storm Sewer	Rearyard	0 - 5	35	Foot	\$ 200	\$ 7,000
High Capacity Inlet	N/A	N/A	4	Each	\$ 3,250	\$ 13,000
7' Diameter Manhole	Residential Street	5 - 8	2	Each	\$ 8,250	\$ 16,500
6' Diameter Manhole	Residential Street	5 - 8	4	Each	\$ 7,000	\$ 28,000
5' Diameter Manhole	Residential Street	5 - 8	9	Each	\$ 5,750	\$ 51,750
4' Diameter Manhole	Residential Street	0 - 5	1	Each	\$ 4,000	\$ 4,000
18" RCP FES	N/A	N/A	1	Each	\$ 1,200	\$ 1,200
15" RCP FES	N/A	N/A	1	Each	\$ 1,000	\$ 1,000
Connection to Existing	N/A	N/A	1	Each	\$ 5,000	\$ 5,000

Construction Subtotal		\$ 824,940
Construction Contingency	20%	\$ 164,988
Construction Total		\$ 989,928
Design Engineering	7.5%	\$ 74,245
Construction Observation	7.5%	\$ 74,245
Permitting (USACE, FPDCC, CCHD)	3.0%	\$ 29,698
<b>Project Total</b>		<b>\$ 1,168,115</b>

Notes

- Prices include sanitary sewer and water service relocation/adjustment, trench backfill, pavement or lawn restoration, traffic control, erosion control, construction layout, mobilization
- Prices do not include right-of-way acquisition, temporary or permanent easements, or relocating other utilities.
- Prices are current for 2012.



Village of Winnetka  
 Flood Risk Reduction Assessment - Additional Study Areas  
 Appendix 6A - Area O Engineer's Opinion of Probable Cost - Alt 1

**Oak Street/Chestnut Street**

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
48" RCP Storm Sewer	Residential Street	12 - 16	1,270	Foot	\$ 550	\$ 698,500
42" RCP Storm Sewer	Residential Street	8 - 12	216	Foot	\$ 420	\$ 90,720
36" RCP Storm Sewer	Residential Street	5 - 8	226	Foot	\$ 330	\$ 74,580
24" RCP Storm Sewer	Downtown Street	5 - 8	214	Foot	\$ 350	\$ 74,900
High Capacity Inlet	N/A	N/A	12	Each	\$ 3,250	\$ 39,000
8' Diameter Manhole	Residential Street	12 - 16	5	Each	\$ 12,750	\$ 63,750
8' Diameter Manhole	Residential Street	8 - 12	1	Each	\$ 11,250	\$ 11,250
8' Diameter Manhole	Residential Street	5 - 8	1	Each	\$ 9,750	\$ 9,750
7' Diameter Manhole	Downtown Street	5 - 8	1	Each	\$ 9,750	\$ 9,750
5' Diameter Manhole	Downtown Street	5 - 8	1	Each	\$ 7,000	\$ 7,000
Connect to Existing	N/A	N/A	1	L. Sum	\$ 25,000	\$ 25,000
						\$ 1,104,200

**Linden Street/Ridge Avenue**

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
30" RCP Storm Sewer	Residential Street	8 - 12	222	Foot	\$ 330	\$ 73,260
24" RCP Storm Sewer	Residential Street	8 - 12	222	Foot	\$ 295	\$ 65,490
High Capacity Inlet	N/A	N/A	4	Each	\$ 3,250	\$ 13,000
5' Diameter Manhole	Residential Street	5 - 8	2	Each	\$ 5,750	\$ 11,500
Connect to Existing	N/A	N/A	2	L. Sum	\$ 1,000	\$ 2,000
						\$ 165,250

**MWRD Disconnection**

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
30" RCP Storm Sewer	Residential Street	8 - 12	449	Foot	\$ 330	\$ 148,170
30" RCP Storm Sewer	Downtown Street	8 - 12	231	Foot	\$ 425	\$ 98,175
6' Diameter Manhole	Downtown Street	8 - 12	2	Each	\$ 9,500	\$ 19,000
Connect to Ex-Drop Shaft	N/A	N/A	1	L. Sum	\$ 120,000	\$ 120,000
						\$ 385,345

Construction Subtotal		\$ 1,654,795
Construction Contingency	20%	\$ 330,959
Construction Total		\$ 1,985,754
Design Engineering	7.5%	\$ 148,932
Construction Observation	7.5%	\$ 148,932
Permitting (MWRD)	1%	\$ 19,857.54
<b>Project Total</b>		<b>\$ 2,303,475</b>

Notes

- Prices include sanitary sewer and water service relocation/adjustment, trench backfill, pavement or lawn restoration, traffic control, erosion control, construction layout, mobilization
- Prices do not include right-of-way acquisition, temporary or permanent easements, or relocating other utilities.
- Prices are current for 2012.



Village of Winnetka  
 Flood Risk Reduction Assessment - Additional Study Areas  
 Appendix 6B - Area O Engineer's Opinion of Probable Cost - Alt 2

**Oak Street/Chestnut Street**

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
48" RCP Storm Sewer	Residential Street	12 - 16	1,270	Foot	\$ 550	\$ 698,500
42" RCP Storm Sewer	Residential Street	8 - 12	216	Foot	\$ 420	\$ 90,720
36" RCP Storm Sewer	Residential Street	5 - 8	226	Foot	\$ 330	\$ 74,580
24" RCP Storm Sewer	Downtown Street	5 - 8	214	Foot	\$ 350	\$ 74,900
High Capacity Inlet	N/A	N/A	12	Each	\$ 3,250	\$ 39,000
8' Diameter Manhole	Residential Street	12 - 16	5	Each	\$ 12,750	\$ 63,750
8' Diameter Manhole	Residential Street	8 - 12	1	Each	\$ 11,250	\$ 11,250
8' Diameter Manhole	Residential Street	5 - 8	1	Each	\$ 9,750	\$ 9,750
7' Diameter Manhole	Downtown Street	5 - 8	1	Each	\$ 9,750	\$ 9,750
5' Diameter Manhole	Downtown Street	5 - 8	1	Each	\$ 7,000	\$ 7,000
Connect to Existing	N/A	N/A	1	L. Sum	\$ 25,000	\$ 25,000
						\$ 1,104,200

**Linden Street/Ridge Avenue**

Item	Location Type	Depth, feet	Quantity	Unit	Unit Price	Item Cost
30" RCP Storm Sewer	Residential Street	8 - 12	222	Foot	\$ 330	\$ 73,260
24" RCP Storm Sewer	Residential Street	8 - 12	222	Foot	\$ 295	\$ 65,490
High Capacity Inlet	N/A	N/A	4	Each	\$ 3,250	\$ 13,000
5' Diameter Manhole	Residential Street	5 - 8	2	Each	\$ 5,750	\$ 11,500
Connect to Existing	N/A	N/A	2	L. Sum	\$ 1,000	\$ 2,000
						\$ 165,250

Construction Subtotal		\$ 1,269,450
Construction Contingency	20%	\$ 253,890
Construction Total		\$ 1,523,340
Design Engineering	7.5%	\$ 114,251
Construction Observation	7.5%	\$ 114,251
Permitting (MWRD)	1%	\$ 15,233.40
<b>Project Total</b>		<b>\$ 1,767,074</b>

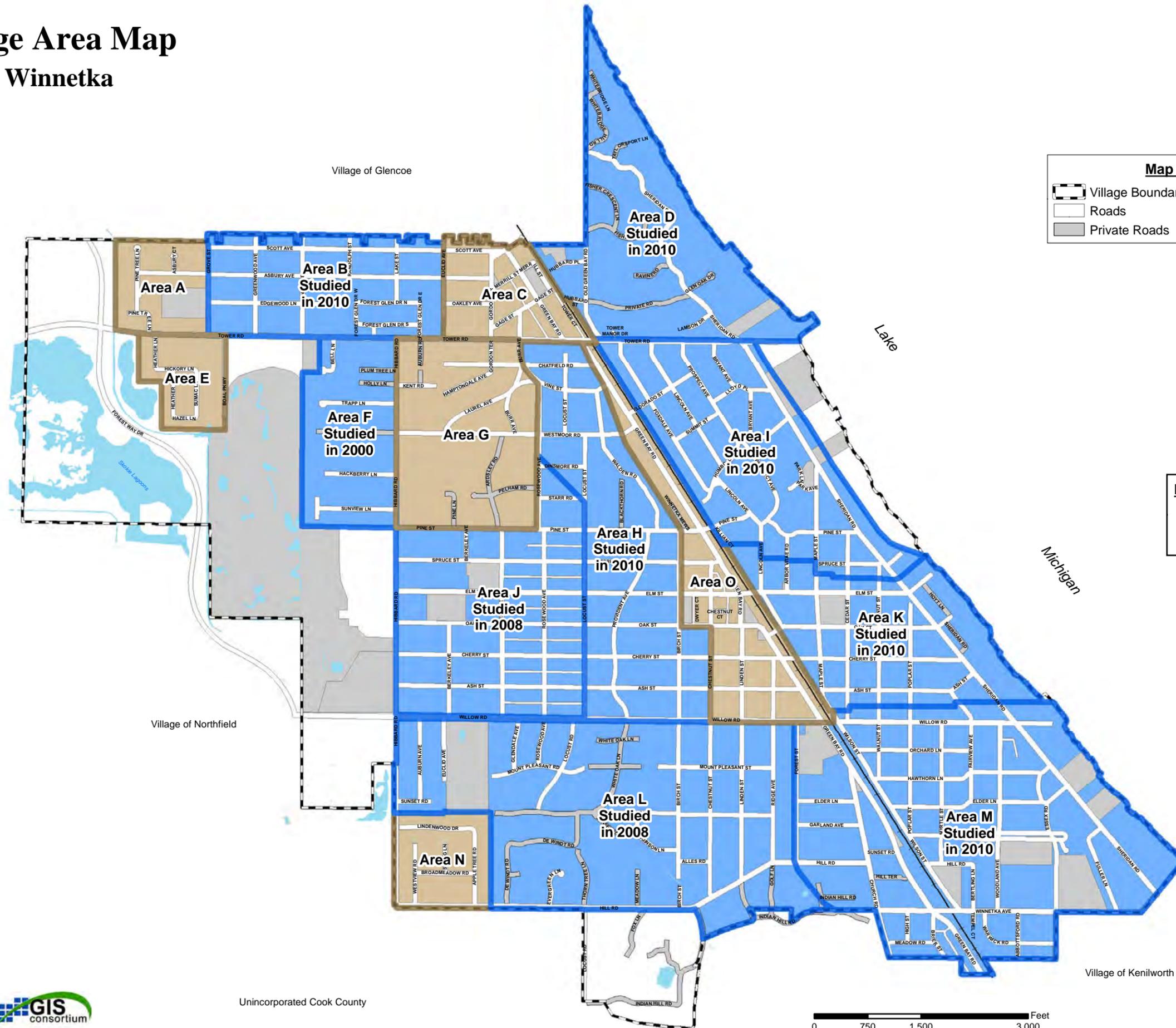
Notes

- Prices include sanitary sewer and water service relocation/adjustment, trench backfill, pavement or lawn restoration, traffic control, erosion control, construction layout, mobilization
- Prices do not include right-of-way acquisition, temporary or permanent easements, or relocating other utilities.
- Prices are current for 2012.





# Drainage Area Map Village of Winnetka



**Map Legend**

	Village Boundary		Recreation Area
	Roads		Water
	Private Roads		Railroad

**Drainage Area Legend**

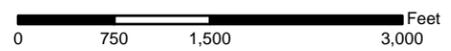
	Studied
	Not Studied



LIMITATION OF LIABILITY: The user agrees that all information shown on this map is for informational purposes only and does not constitute a warranty or endorsement. The Village of Winnetka and its staff are not responsible for any errors or omissions on this map. The Village of Winnetka and its staff are not responsible for any damages or losses resulting from the use of this map. The Village of Winnetka and its staff are not responsible for any claims or lawsuits resulting from the use of this map.



Unincorporated Cook County



State Plane Nad 83 Illinois East  
December 4, 2012 EDV DrainageArea

VILLAGE OF  
WINNETKA,  
ILLINOIS

**Exhibit 2**

*Area A Proposed Conditions*

-  Study Area
-  Problem Area
-  Increase Inlet Capacity
-  Proposed Sewer

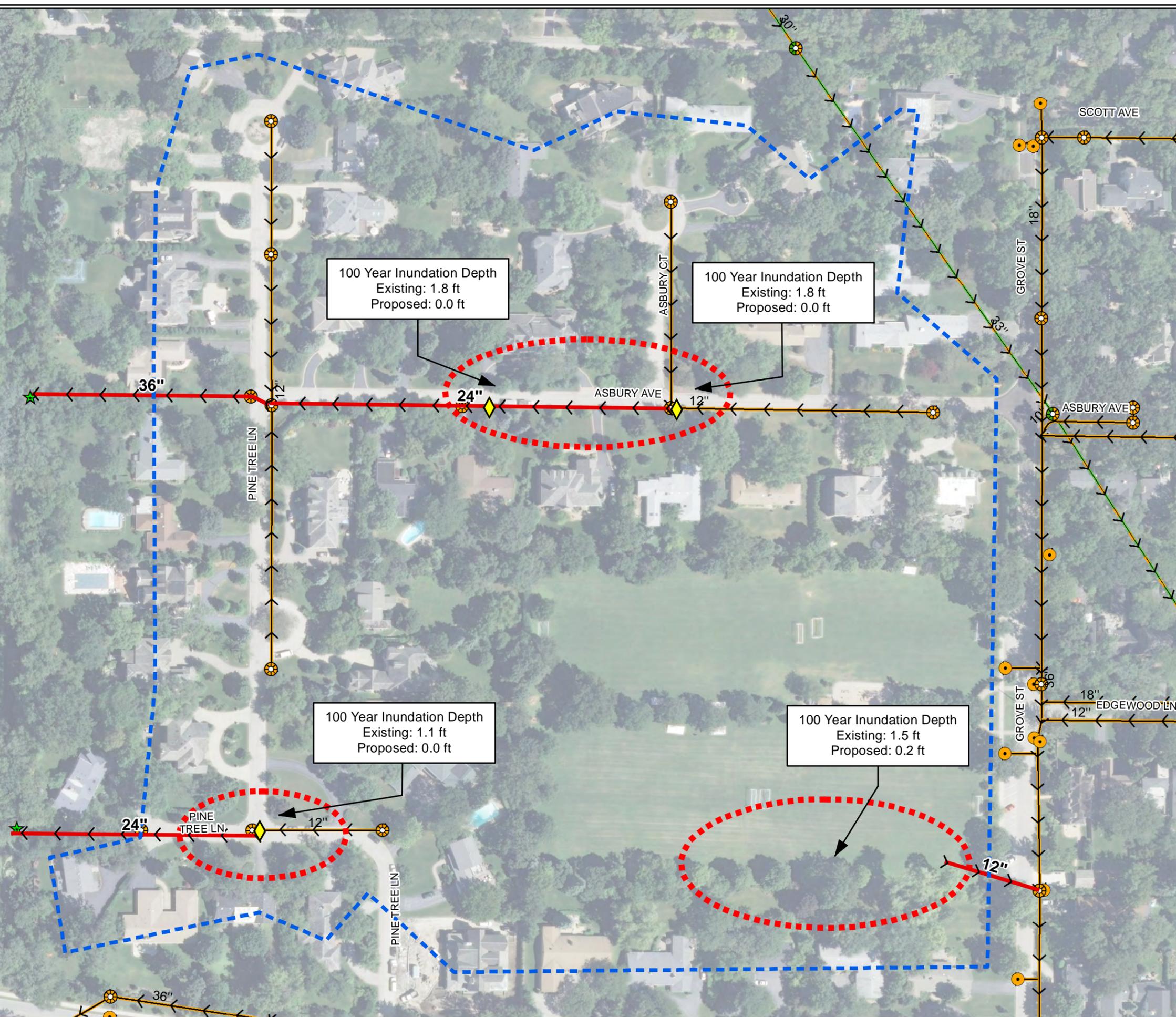
**Existing Data**

- Streets
-  Manhole - Combined
-  Manhole - Storm
-  Catch Basin
-  Inlet
-  Discharge Point
-  Pipe - Combined
-  Pipe - Storm

**Engineer's Opinion of  
Probable Cost= \$493,408**



1 inch = 125 feet  
Agenda Packet, P. 89



Path: I:\Mokena\WINNETKA\GIS\120309.30 Exhibits\WINNETKA\_AreaA\_Proposed.mxd

VILLAGE OF WINNETKA, ILLINOIS

Exhibit 3A

Area C Proposed Conditions

Alternate 1

-  Study Area
-  Problem Area
-  Increase Inlet Capacity
-  Proposed Sewer
-  Proposed Sewer (Separate Study)

Existing Data

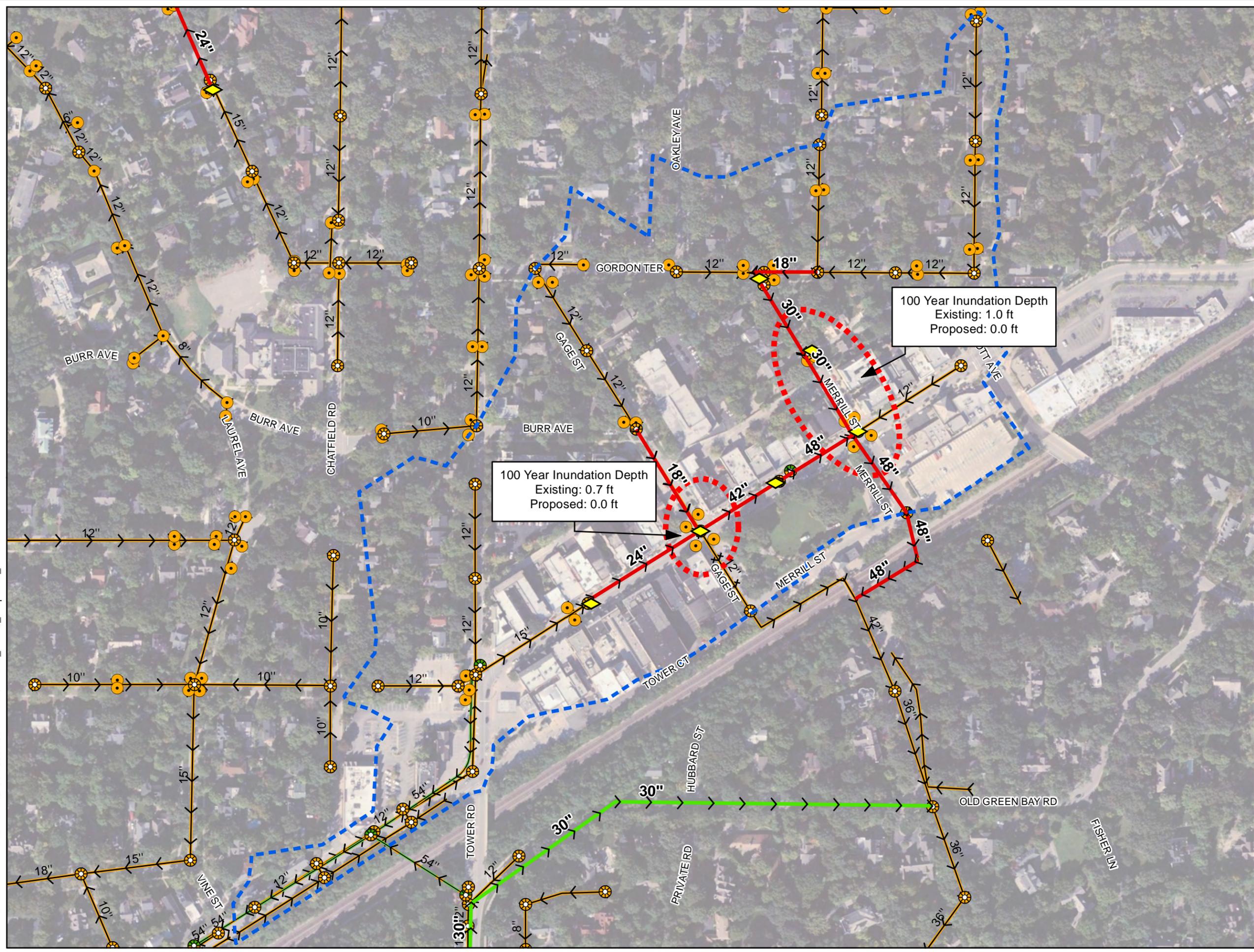
- Streets
-  Manhole - Combined
-  Manhole - Storm
-  Catch Basin
-  Inlet
-  Discharge Point
-  Pipe - Combined
-  Pipe - Storm

Engineer's Opinion of Probable Cost= \$1,913,278



1 inch = 225 feet  
Agenda Packet, P. 90

Path: I:\Mokona\WINNETKA\General\GIS\120309.30 Exhibits\WINNETKA\_AreaC\_Proposed\_Alt1.mxd



# VILLAGE OF WINNETKA, ILLINOIS

## Exhibit 3B

Area C Proposed Conditions

Alternate 2

-  Study Area
-  Problem Area
-  Increase Inlet Capacity
-  Proposed Sewer
-  Proposed Sewer (Separate Study)

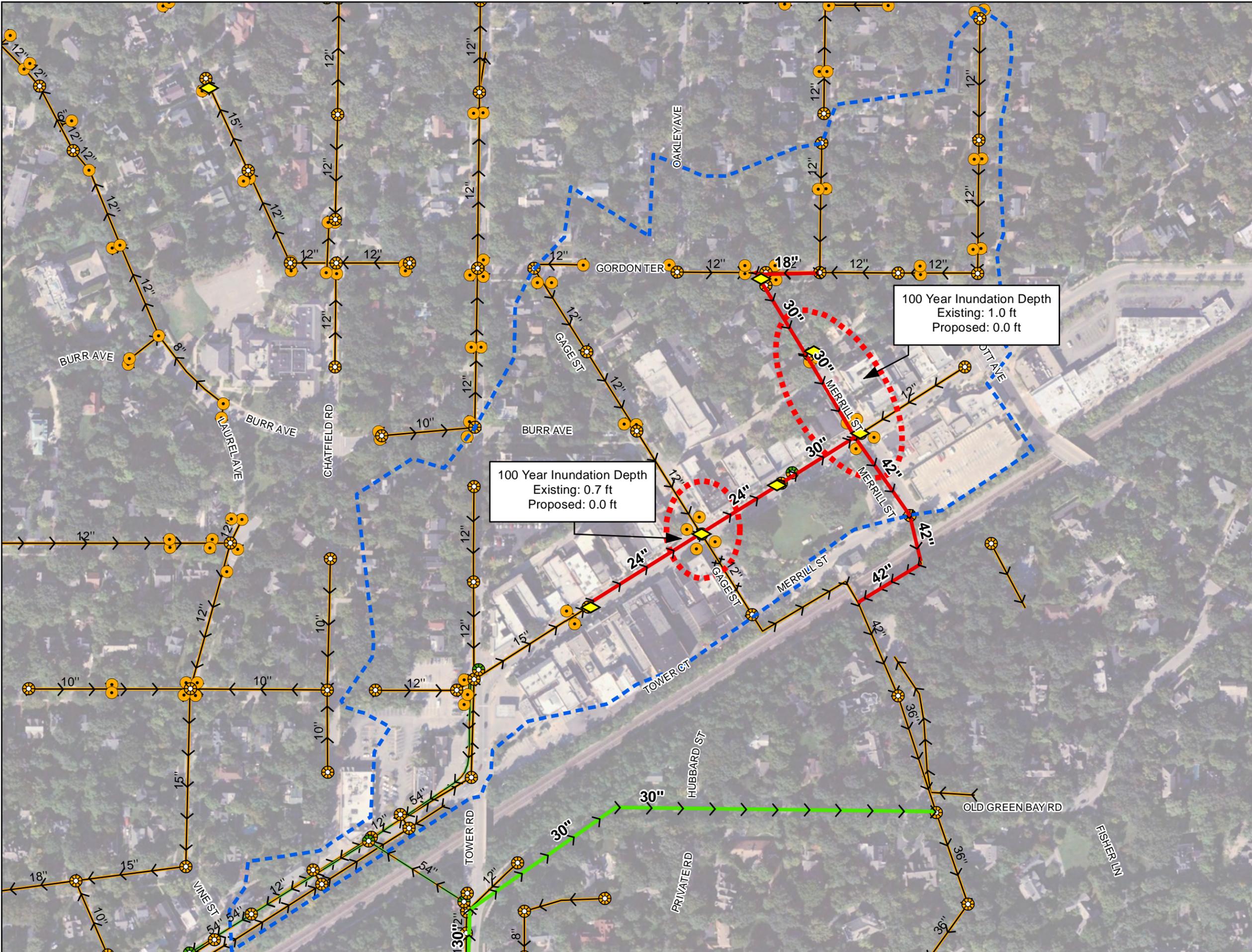
### Existing Data

- Streets
-  Manhole - Combined
-  Manhole - Storm
-  Catch Basin
-  Inlet
-  Discharge Point
-  Pipe - Combined
-  Pipe - Storm

Engineer's Opinion of Probable Cost= \$1,668,341



1 inch = 225 feet  
Agenda Packet, P. 91



Path: I:\Mokona\WINNETKA\General\GIS\120309.30 Exhibits\WINNETKA\_AreaC\_Proposed\_Alt2.mxd

# VILLAGE OF WINNETKA, ILLINOIS

## Exhibit 4

Area E Proposed Conditions

-  Study Area
  -  Problem Area
  -  Increase Inlet Capacity
  -  Proposed Sewer
- Existing Data**
- Streets
  -  Manhole - Combined
  -  Manhole - Storm
  -  Catch Basin
  -  Inlet
  -  Discharge Point
  -  Pipe - Combined
  -  Pipe - Storm

**Engineer's Opinion of Probable Cost= \$862,755**



1 inch = 150 feet  
Agenda Packet, P. 92

Path: I:\Mokena\WINNETKA\General\GIS\120309.30 Exhibits\WINNETKA\_AreaE\_Proposed.mxd



VILLAGE OF  
WINNETKA,  
ILLINOIS

**Exhibit 5**

Area G Proposed Conditions

-  Study Area
-  Problem Area
-  Increase Inlet Capacity
-  Proposed Sewer
-  Proposed Sewer (Separate Study)

**Existing Data**

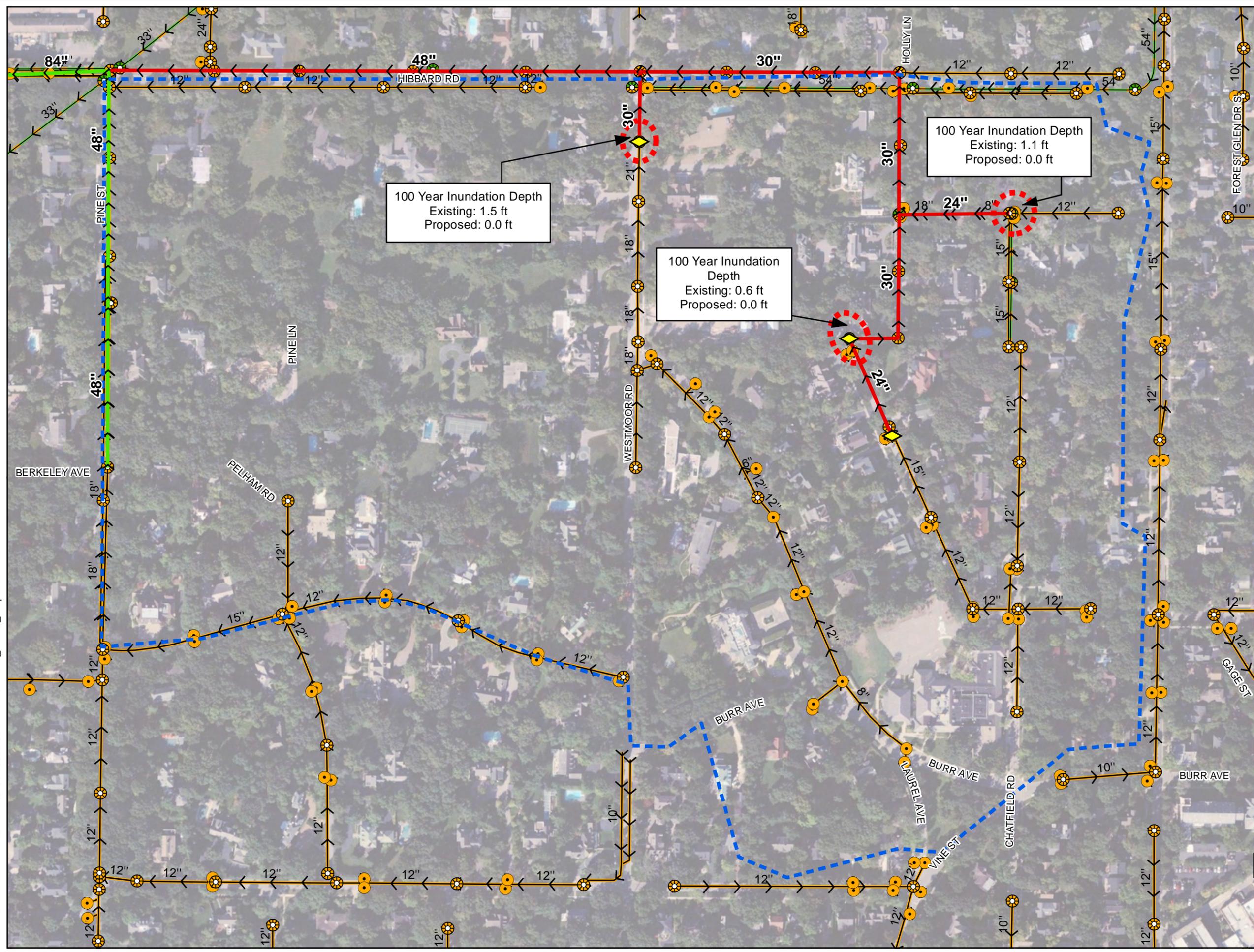
-  Manhole - Combined
-  Manhole - Storm
-  Catch Basin
-  Inlet
-  Discharge Point
-  Pipe - Combined
-  Pipe - Storm

**Engineer's Opinion of  
Probable Cost= \$1,961,270**



1 inch = 225 feet  
Agenda Packet, P. 93

Path: I:\Mokona\WINNETKA\General\GIS\120309.30 Exhibits\WINNE\_AreaG\_Proposed.mxd



# VILLAGE OF WINNETKA, ILLINOIS

## Exhibit 6

### Area N Proposed Conditions

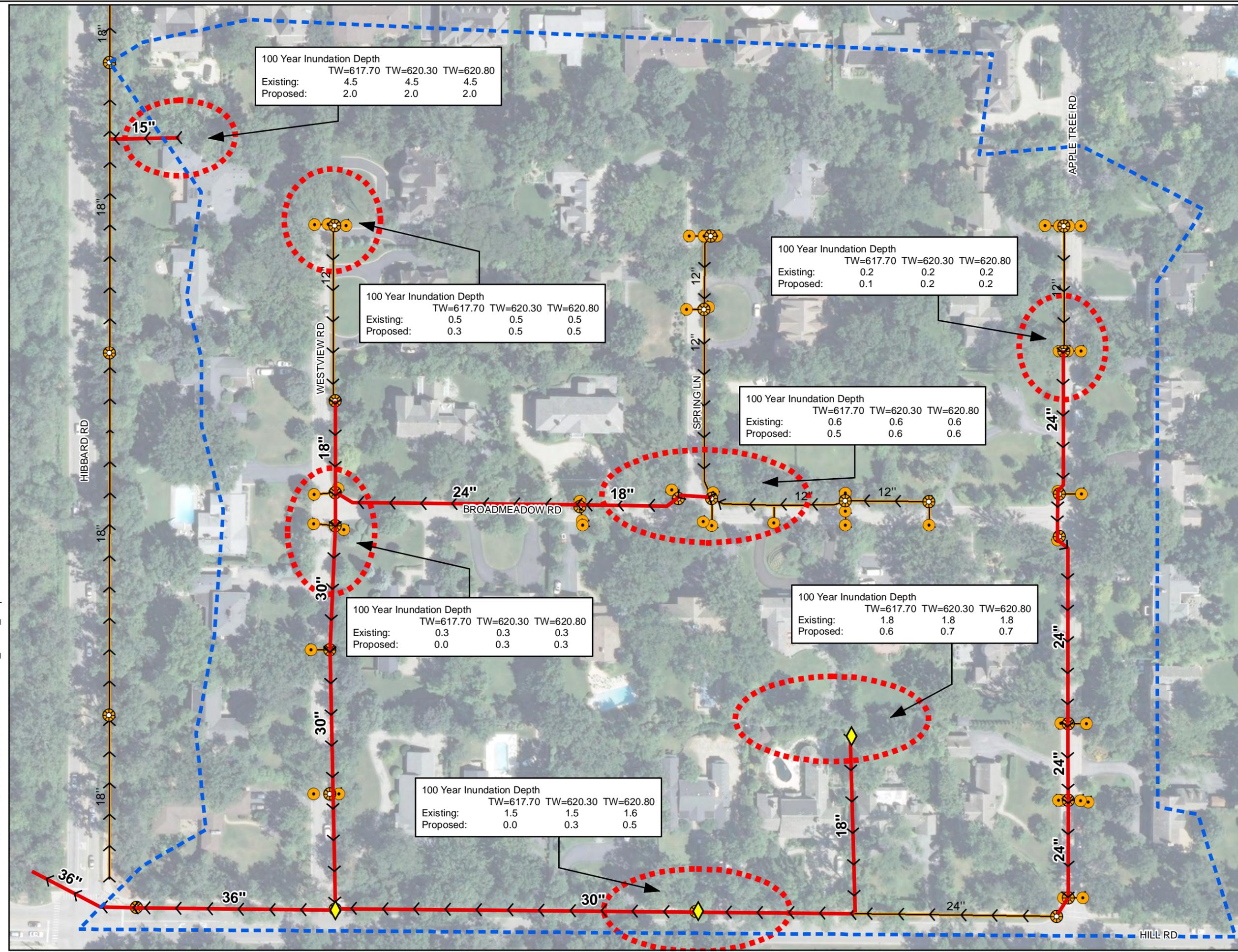
-  Study Area
-  Problem Area
-  Increase Inlet Capacity
-  Proposed Sewer
-  Existing Data
- Streets
-  Manhole - Combined
-  Manhole - Storm
-  Catch Basin
-  Inlet
-  Discharge Point
-  Pipe - Combined
-  Pipe - Storm

Engineer's Opinion of Probable Cost= \$1,168,115



1 inch = 100 feet  
Agenda Packet, P. 94

Path: I:\Mokona\WINNETKA\GIS\120309.30 Exhibits\WINNETKA\_AreaN\_Proposed.mxd



# VILLAGE OF WINNETKA, ILLINOIS

## Exhibit 7A

Area O Proposed Conditions

Alternate 1

-  Study Area
-  Problem Area
-  Increase Inlet Capacity
-  Proposed Sewer
-  Proposed Sewer (Separate Study)

### Existing Data

-  Manhole - Combined
-  Manhole - Storm
-  Catch Basin
-  Inlet
-  Discharge Point
-  Pipe - Combined
-  Pipe - Storm

**Engineer's Opinion of Probable Cost= \$2,303,475**



1 inch = 450 feet  
Agenda Packet, P. 95

Path: I:\Mokena\WINNETKA\General\GIS\120309.30 Exhibits\WINNE\_AreaO\_Proposed\_Alt1.mxd

