



Wastewater Committee

Agenda Item No 4.2

Date: December 14, 2011

CMAP Water Quality Review #: 11-WQ-051

Applicant: Village of Hoffman Estates

Re: The Village of Hofmann Estates has submitted a request to transfer 451.77 acres of land from the Fox River Water Reclamation District (FRWRD) Facility Planning Area (FPA) into the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) Sub-FPA of the Fox River Water Reclamation District FPA.

Based on the policies and recommendations of the *Areawide Water Quality Management Plan for Northeastern Illinois*, the *Illinois Water Quality Management Plan*, local government and agency comments, comments received from various interested and affected parties, and staff's analysis, staff recommends a recommendation of "**Support**" for the proposed amendment request.

Important Note: CMAP is the designated areawide water quality planning agency and the advisory comprehensive regional planning agency for northeastern Illinois. Therefore, CMAP needs to act as a consensus builder by promoting sound planning principles and practices. Though not specifically required by the Illinois Environmental Protection Agency (IEPA), Criteria Nos. 6 – 9 specifically address CMAP's regional role and promote sound planning.



Chicago Metropolitan Agency for Planning

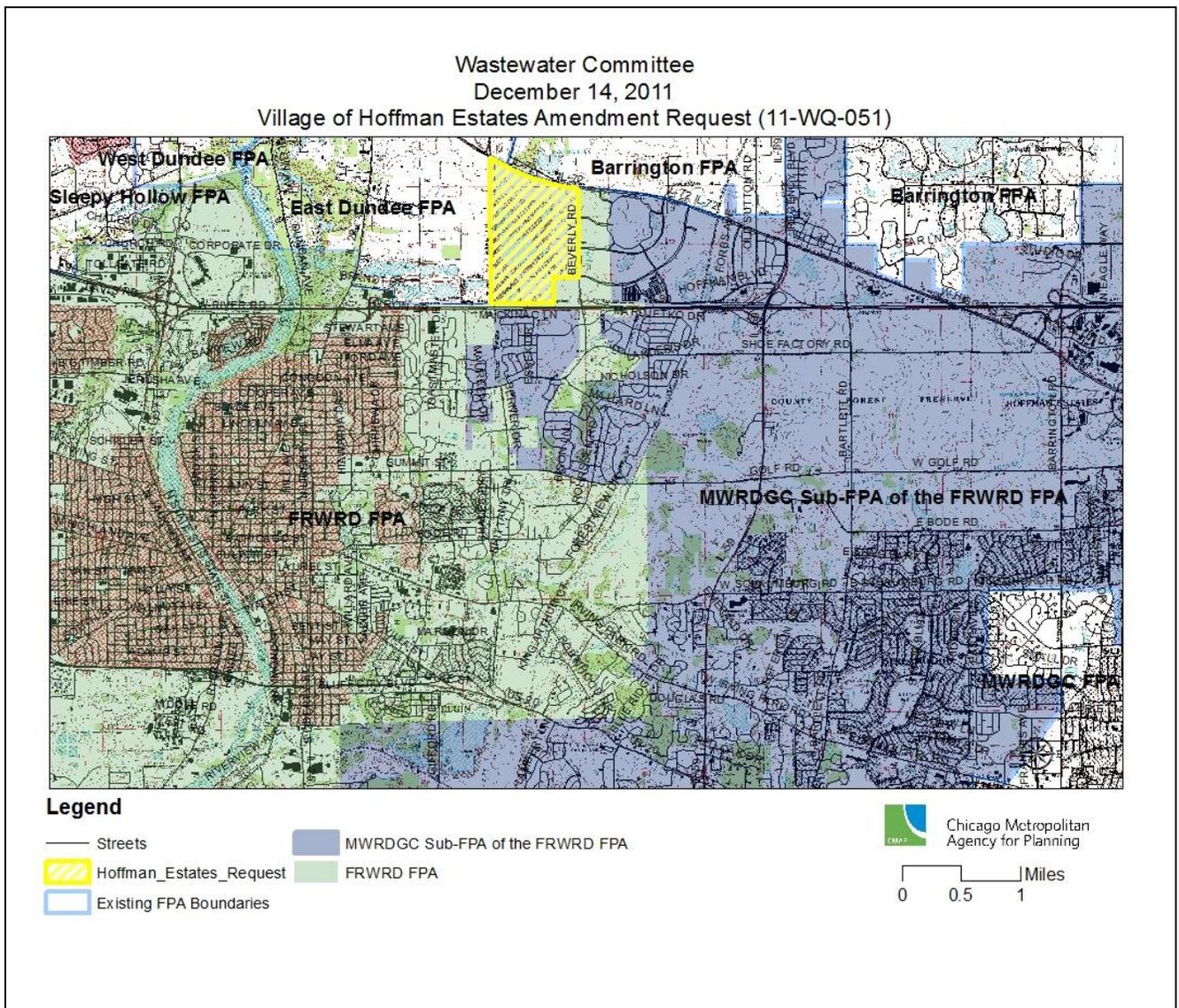
233 South Wacker Drive
Suite 800
Chicago, Illinois 60606

312 454 0400
www.cmap.illinois.gov

A. REQUEST SUMMARY

The Village of Hofmann Estates has submitted a request to transfer 451.77 acres of land from the FRWRD FPA into the MWRDGC Sub-FPA of the FRWRD. The amendment area receives wastewater treatment from the FRWRD South Regional Treatment Plant. The proposed area is located in Cook County, Townships 41N and 42N, Sections 5, 30 and 31.

Map of FPA Boundary Amendment Area





Below is a summary and analysis of the proposed amendment application with regards to these criteria.

Review Criteria and Staff Analysis	Results																									
<p>1. <i>“The proposed facility amendment must be designed to meet the State of Illinois water quality standards for the receiving waters and the appropriate discharge standards or must receive a variance from the Illinois Pollution Control Board.”</i></p>	<p>Consistent</p>																									
<p>The Village of Hoffman Estates is requesting an FPA Amendment request to transfer 451.77 acres of land located within the Village of Hoffman Estates, and part of the FRWRD FPA, into the MWRDGC Sub-FPA of the FRWRD FPA. The land was annexed to MWRDGC by State Statue (Public Act 91-0945) in 1999; however, the MWRDGC Sub-FPA boundary was never adjusted to reflect this jurisdictional change.</p> <p>The subject parcel will be served by the FRWRD South Regional Wastewater Treatment Plant (WWTP). However, MWRDGC owns the sanitary sewer lines that serve the wastewater flow to the WWTP. The WWTP is neither located on the Illinois Environmental Protection Agency (IEPA) critical review list or restricted status list. The WWTP was constructed to a design average flow (DAF) capacity of 25 million gallons per day (MGD). Recent flow data from the WWTP indicates the current average daily flow to the WWTP is approximately 15.67 mgd. The FRWRD South Regional WWTP currently discharges to the Fox River.</p> <p>The FRWRD South Regional WWTP operates under NPDES Permit No. IL0028657, which expired on December 14, 2009. To date, an application to renew this permit is being considered by the IEPA for consideration and approval. Based on the flow and effluent data summary provided by the applicant, it would appear the FRWRD South Regional WWTP has been meeting the requirements established in the facility’s current NPDES permit. Comparable permit requirements have been proposed in the NPDES Permit Renewal application. The permit has the following limits:</p>																										
<table border="1"> <thead> <tr> <th colspan="3">Load Limits lbs/day DAF (DMF)</th> </tr> <tr> <th></th> <th>Monthly Average</th> <th>Daily Maximum</th> </tr> </thead> <tbody> <tr> <td>CBOD₅</td> <td>2,085 (4,170)</td> <td>4,170 (8,340)</td> </tr> <tr> <td>Suspended Solids</td> <td>2,502 (5,004)</td> <td>5,004 (10,008)</td> </tr> <tr> <td>pH</td> <td colspan="2">Shall be in the range of 6 to 9 Standard Units</td> </tr> <tr> <td>Fecal Coliform</td> <td colspan="2">Daily Maximum Shall not exceed 200 per 100 mL and no more than 10% of the samples in any month shall exceed 400 per 100 mL.</td> </tr> <tr> <td rowspan="3"><u>Ammonia Nitrogen</u></td> <td>March</td> <td>584 (1168)</td> </tr> <tr> <td>April-May/Sept.-Oct.</td> <td>313 (626)</td> </tr> <tr> <td>June-August</td> <td>313 (626)</td> </tr> </tbody> </table>	Load Limits lbs/day DAF (DMF)				Monthly Average	Daily Maximum	CBOD ₅	2,085 (4,170)	4,170 (8,340)	Suspended Solids	2,502 (5,004)	5,004 (10,008)	pH	Shall be in the range of 6 to 9 Standard Units		Fecal Coliform	Daily Maximum Shall not exceed 200 per 100 mL and no more than 10% of the samples in any month shall exceed 400 per 100 mL.		<u>Ammonia Nitrogen</u>	March	584 (1168)	April-May/Sept.-Oct.	313 (626)	June-August	313 (626)	
Load Limits lbs/day DAF (DMF)																										
	Monthly Average	Daily Maximum																								
CBOD ₅	2,085 (4,170)	4,170 (8,340)																								
Suspended Solids	2,502 (5,004)	5,004 (10,008)																								
pH	Shall be in the range of 6 to 9 Standard Units																									
Fecal Coliform	Daily Maximum Shall not exceed 200 per 100 mL and no more than 10% of the samples in any month shall exceed 400 per 100 mL.																									
<u>Ammonia Nitrogen</u>	March	584 (1168)																								
	April-May/Sept.-Oct.	313 (626)																								
	June-August	313 (626)																								



Nov.-Feb.	---	605 (1209)	
<p>The WWTP also operates an excess flow facility in compliance with specific concentration limits that meet Federal Code Regulation 40 CFR 133.102. Excess flows receive secondary treatment, including primary clarification, disinfection and dechlorination.</p>			
<p>The FRWRD South Regional WWTP NPDES Permit revealed that the treatment plant is a combined sewer system. According to the NPDES Permit, a discharge of one combined sewer overflow (CSO) into the Fox River is permitted. However, the CSO discharged 17 times in 2009 alone. As such, the Permit requires the permittee to develop a Combined Sewer Overflow Long-Term Control Plan consistent with requirements of the Clean Water Act. In an effort to minimize inflow and infiltration to the plant, the permittee has plans to conduct system-wide manhole inspections and repairs. A program to remove illegal sump pump flows from sanitary sewers is also proposed. Lastly, the permittee proposes to separate the combined sewers into sanitary and storm sewers and will require new homes to connect their sump pumps to the storm sewer.</p>			
<p>As stated, the FRWRD South Regional WWTP currently discharges treated wastewater to the Fox River. According to the NPDES Permit, the segment of the Fox River into which the WWTP discharges has been given a biological stream classification rating of "C" by the Illinois Department of Natural Resources' (IDNR) stream rating system^a. Data used for this biological stream classification are based on species diversity and integrity ratings. The Fox River is also included on the Illinois Section 303(d) list. In the 2008 Illinois Integrated Water Quality Report, the impairment level of the Fox River is listed as impaired for aquatic life, fish consumption, and primary contact recreation. Total phosphorus, fecal coliform, sedimentation/siltation, PCBs are common potential causes of impairment amongst other constituents for the Fox River. Currently, the Fox River Study Group (FRSG) has been conducting both water quality and combined sewer overflow monitoring in the Fox River. The results of the study will help develop a plan to preserve and enhance the water quality of the Fox River. As such, the applicant is encouraged to adopt recommendations from the FRSG when they become available.</p>			
<p>Recommendations:</p> <ul style="list-style-type: none"> • The applicant should continue to develop a Combined Sewer Overflow Long-Term Control Plan consistent with requirements of the Clean Water Act to minimize inflow and infiltration. • The applicant should be prepared to meet the resultant recommendations derived from the FRSG's monitoring efforts. 			
<p>2. <i>"The population and employment for which the proposed amendment is designed must fall within the twenty year forecast most recently adopted by the Commission for the facility</i></p>			<p>Consistent</p>



<i>planning area or the Commission may agree to adjustments within the regional forecast total."</i>																																			
The applicant provided the following population estimates and the estimated daily average wastewater flow generated from these estimates for the amendment request by the year 2020.																																			
	<table border="1"> <thead> <tr> <th></th> <th>Current</th> <th>Forecasted Number</th> </tr> </thead> <tbody> <tr> <td>Population</td> <td>0</td> <td>5028</td> </tr> <tr> <td>Number of Households</td> <td>0</td> <td>1650</td> </tr> <tr> <td>Residential Population Equivalent (PE)</td> <td>0</td> <td>5028</td> </tr> <tr> <td>Employment</td> <td>0</td> <td>3669</td> </tr> <tr> <td>Employment Population Equivalent (PE)</td> <td>0</td> <td>550</td> </tr> <tr> <td>Total Population Equivalent (PE)</td> <td>0</td> <td>5578</td> </tr> <tr> <td colspan="3">Daily Average Wastewater Flow</td> </tr> <tr> <td>Domestic</td> <td>0</td> <td>502,800</td> </tr> <tr> <td>Industrial</td> <td>0</td> <td>55,035</td> </tr> <tr> <td>Total</td> <td>0</td> <td>557,835</td> </tr> </tbody> </table>		Current	Forecasted Number	Population	0	5028	Number of Households	0	1650	Residential Population Equivalent (PE)	0	5028	Employment	0	3669	Employment Population Equivalent (PE)	0	550	Total Population Equivalent (PE)	0	5578	Daily Average Wastewater Flow			Domestic	0	502,800	Industrial	0	55,035	Total	0	557,835	
	Current	Forecasted Number																																	
Population	0	5028																																	
Number of Households	0	1650																																	
Residential Population Equivalent (PE)	0	5028																																	
Employment	0	3669																																	
Employment Population Equivalent (PE)	0	550																																	
Total Population Equivalent (PE)	0	5578																																	
Daily Average Wastewater Flow																																			
Domestic	0	502,800																																	
Industrial	0	55,035																																	
Total	0	557,835																																	
In January of 2011, the Village of Hoffman Estates participated in CMAP's 2040 forecast discussions utilizing Future View, a GIS-based population and employment projections tool. During these discussions, the Village of Hoffman Estates identified the amendment area as an area for future growth. CMAP's 2040 population projection for the Village of Hoffman Estates includes 60,189 households and an employment future service area growth of 32,467. The amendment area's population projections fall well within CMAP's forecasts. As such, Staff issues a finding of consistent with this criterion based on CMAP's 2040 population forecasts.																																			
3.	<i>"The applicant must demonstrate that the unit of local government granting zoning to the project formally accept financial responsibility for the wastewater treatment system in the event of a system malfunction or failure. Such acceptance must be in the form of a resolution from the unit of government granting zoning."</i>	Not Applicable																																	
The requested amendment does not involve the construction, operation or modification of a privately-owned treatment facility.																																			
4.	<i>"The proposed amendment should not reduce the effectiveness of the water quality improvement strategy contained in the original plan, either for point or nonpoint source control."</i>	Inconsistent																																	
Point Source Impacts (See analysis under Criterion #1)																																			
Nonpoint Source Impacts																																			
There are no floodplains within the amendment area. However, there are several wetlands within the amendment area; all with the exception of one exists within the amendment area,																																			



which is currently being mined as a gravel pit. The amendment will include filling, dredging, channelization, disposal or a similar activity of a lake stream, wetland or floodplain.

The Village of Hoffman Estates has adopted both the MWRDGC and its own nonpoint source management ordinances. Both ordinances have provisions for stormwater management. However, the Village of Hoffman Estates has its own Soil Erosion and Sediment Control Ordinance and has adopted MWRDGC's Floodplain Management Ordinance. Neither ordinance has provisions for stream and wetland protection. The floodplain management, soil erosion and sediment control, and floodplain ordinances, are generally consistent with CMAP's model ordinances. However, the Village has not adopted a stream and wetland ordinance. Instead, the Village's engineer, in a letter dated December 6, 2011 argued that Hoffman Estates uses its approval process to require conservation of natural areas, streams, and wetlands and that developers generally comply with these requirements. The Village is also waiting on the new MWRDGC ordinance to see how stream and wetland protection will be addressed.

Due to the omission of a stream and wetland ordinance, the following discrepancies from the checklist in Section # of the application apply:

Stream and Wetland Protection

- Does not include comprehensive purpose statement which addresses the protection of hydrologic and hydraulic, water quality, habitat, aesthetic, and social and economic values and functions of wetlands.
- Does not protect the beneficial functions of streams, lakes, and wetlands from damaging modifications, including filling, draining, excavating, damming, impoundment, and vegetation removal.
- Does not prohibit the modification of high quality, irreplaceable wetlands, lakes, and stream corridors.
- Does not discourage the modification of wetlands for stormwater management purposes unless the wetland is severely degraded and nonpoint source BMPs are implemented on the adjacent development.
- Does not designate a minimum 75 foot setback zone from the edge of identified wetlands and water bodies in which development is limited to the following types of activities: minor improvements like walkways and signs, maintenance of highways and utilities, and park and recreational area development.
- Does not establish a minimum 25-foot wide protected native vegetation buffer strip along the edge of identified wetlands and waterbodies.
- Does not prohibit watercourse relocation or modification except to remedy existing erosion problems, restore natural conditions, or to accommodate necessary utility crossings; and require mitigation of unavoidable adverse water quality and aquatic habitat impacts.
- Does not discourage the armoring of channels and banks unless natural vegetation and gradual bank sloping are inadequate to prevent severe erosion?



<ul style="list-style-type: none"> • Does not discourage culvert crossings of streams unless necessary for allowing access to a property. • Does not discourage onstream impoundments unless public interest and environmental mitigation criteria are met. • Does not require adequate mitigation measures for approved wetland and waterbody modifications, including 1.5 to 1 acreage replacement for destroyed wetlands, maintenance and monitoring for at least 5 years, and full restoration of natural wetland or waterbody functions. <p>The Illinois Department of Natural Resources (IDNR) identified protected resources that may be in the vicinity of the proposed action. An additional evaluation will be conducted by IDNR within 30 days to determine if adverse effects will occur as a result of the development. Staff recommends that the applicant complete its endangered species evaluation with IDNR and receive a signoff letter prior to development.</p> <p>Recommendations:</p> <ul style="list-style-type: none"> • The Village should adopt a Stream and Wetland Protection Ordinance to include the provisions cited above. A copy of the revised ordinance should be provided to CMAP upon adoption by the Village. • Staff recommends that the applicant complete an IDNR endangered species evaluation and receive confirmation that no adverse effects are likely as a result of the proposed transfer. 	
<p>5. <i>"The proposed amendment should not adversely affect the cost-effectiveness of the Areawide Water Quality Management Plan for meeting water quality standards in the facility planning areas as a whole."</i></p>	Consistent
<p>The applicant provided one treatment alternative and a cost evaluation associated with it. The alternative evaluated included the following:</p> <ul style="list-style-type: none"> • Alternative No. 1: Connect to the FRWRD FPA <p>Connections points are already provided to connect to the MWRD Sub-FPA. As such, it would be cost prohibitive to construct new off-site sanitary sewers to connect to the FRWRD FPA.</p> <p>The applicant estimated that Alternative 1 would cost a total of \$2,000,000, while the applicants selected alternative costs totaled \$750,000. As such, this alternative option was dismissed based on cost-effectiveness.</p> <p>The applicant's selected alternative includes providing service to the amendment area through an existing 15" sewer along Beverly Road and an existing 18" sewer along the south side of the Jane Adams Tollway. The area will be served by gravity sewers.</p>	



<p>Though a breakdown of costs associated with the amendment was requested in the original FPA amendment application and in a supplemental letter from CMAP to the applicant, the applicant failed to do so. Instead, the applicant's engineer, in a follow up letter dated December 6, 2011, stated that "the developer will be paying for the design, and construction of the improvements as the current system is expanded, the connection fee is part of the permit fee for each development and the monthly service fee and monthly cost for sanitary services are covered as part of the Village's water bill and also by the property taxes paid to the county each year."</p>	
<p>6. <i>"The proposed amendment should have the endorsement of the designated management agency for wastewater treatment and substantial support by the municipalities within the affected facility planning area."</i></p>	<p>Consistent</p>
<p>The amendment area is currently located within both the Village of Hoffman Estates' municipal boundary and within FRWRD's FPA. The amendment area will be transferred to MWRDGC's FPA. As such, letters of support for the FPA boundary change were required from each entity. To date, the Village of Hoffman Estates endorsed the proposed transfer of the amendment request at its November 14, 2011 Village Board meeting. Additionally, the Fox River Water Reclamation District, in a letter dated April 6, 2011, voiced support for the transfer of land from the FRWRD FPA into the MWRDGC FPA. Lastly, the Metropolitan Water Reclamation District of Greater Chicago, in a letter dated November 8, 2011 voiced no objection to the transfer.</p>	
<p>7. <i>"The proposed amendment should not adversely affect adjoining units of government."</i></p>	<p>Consistent</p>
<p>All land within the proposed FPA is located within the municipal boundaries of the Village of Hoffman Estates and will have no impact on adjoining units of government.</p>	
<p>8. <i>"The proposed amendment should be consistent with other county and regional or state policies, such as the Governor's Executive Order #4 on the preservation of agricultural land."</i></p> <p><u>Agricultural Protection</u></p> <p>The Illinois Department of Agriculture, in a letter dated October 21, 2011, voiced no concerns on the proposed amendment request.</p> <p><u>Village of Hoffman Estates Comprehensive Land Use Plan</u></p> <p>Staff reviewed the Village of Hoffman Estates' most recent Comprehensive Plan. The amendment area lies within the municipal boundaries of the Village of Hoffman Estates and is currently zoned as an office district, attached single family, two family residential, and an apartment district. The future land use is planned for Retail Residential Mixed Use. The land uses are consistent with the development plans presented in the application.</p>	<p>Consistent</p>



Chicago Metropolitan Agency for Planning

233 South Wacker Drive
Suite 800
Chicago, Illinois 60606

312 454 0400
www.cmap.illinois.gov

<p><u>Agricultural Protection</u></p> <p>The Illinois Department of Agriculture (IDOA) conducted a study of the potential farmland impacts associated with the request. In a letter dated October 14, 2011 IDOA voiced no objection to IEPA’s approval of the FPA transfer.</p>	
<p>9. <i>“Consideration will be given to evidence of municipal or county zoning approval and commencement of development activity prior to Area-wide Water Quality Management Plan adoption in January 1979.”</i></p>	<p>Not Applicable</p>

^a : Illinois Department of Natural Resources. *Integrating Multiple Taxa in a Biological Stream Rating System*, Illinois. <http://dnr.state.il.us/orc/biostrmratings/> (accessed December 8, 2011). IDNR’s Biological Stream Classification rating system has been updated and enhanced. The present rating system is based a stream’s diversity, integrity, and biological significance.