

# Meeting Minutes

Advisory Technical Panel – Updating Infiltration and Inflow Control Program

Location: MWRD LASMA Visitor Center

Date: July 18, 2012 1:00pm to 4:30pm

Attendees: See attached

- A. Ms. Maureen Durkin, Supervising Civil Engineer, MWRD, welcomed the ATP Members and introduced Distinguished Guest Speakers.
- B. Mr. David St. Pierre, Executive Director, MWRD, gave a presentation detailing the next steps the MWRD is taking toward developing a new I/I Control Program.
  1. Mr. David Weakley, Commissioner of Public Works - City of Palos Hills, asked for clarification of Mr. St. Pierre's statement regarding consensus between the Councils of Government (COGs) and the MWRD on the parameters of the new program. Mr. St. Pierre stated that he would like to discuss the new program with the leaders of the COGs to gather their input and determine if it could be adopted at their meetings and then adopted by the MWRD Board of Commissioners.
  2. Mr. Weakley asked if the municipal representatives would have a vote on adopting the new program. Mr. St. Pierre stated that he believes that all the COGs would adopt the new program by vote, but that he would need to talk to the MWRD Board about this too.
  3. Mr. Fred Vogt, Director of Public Works - City of Rolling Meadows stated that the internal and external review time be considered when discussing the new program with the COGs since several municipalities are involved. Mr. St. Pierre noted that the review period may take some time and indicated he anticipated adopting a new program by the first or second quarter of 2013.
  4. Mr. Ross Dring, Trustee - Kimberly Heights Sanitary District asked when a draft of the new program will be available to be reviewed by the ATP members. Mr. St. Pierre stated that a tentative draft will be produced after obtaining approval of different program elements with the Board. He anticipates distributing a tentative draft to the ATP members in November 2012 for review and comment. In the interim he will set up meetings with the leaders of the COGs.
- C. Mr. Geoff Andres, Infrastructure Financial Assistance Section, IEPA discussed via conference call, the SRF Loan Program and possible changes (related to the eligibility) to the program.

1. Ms. Durkin stated that SRF funds cannot currently be spent on private property. She asked if in the future there will be opportunity to fund private sector improvements if the municipality is involved with administrating the funds. Mr. Andres stated that it may be a possibility and it has been discussed. He explained that current regulations from the USEPA prohibit use of SRF funds for private property improvements/rehabilitation. He stated that currently \$400 million dollars is available through the SRF, and it probably will not be enough to fund the I/I program that is being discussed. He indicated that is still a lot of work to be done in the public sector. Currently they have discussed an "infrastructure bank" concept with the idea of a municipality or the MWRD taking out loan and then using the funds on projects or programs that their program does not directly fund.
  2. Mr. Dring asked what the current interest rate is under the program. Mr. Andres stated that the interest rate is tied to the general obligation fund rate and anticipates it to be less than 2% in 2014. He also stated that principle forgiveness may be going away. He cited that in 2010 IEPA was required to forgive \$46M, in 2011 it was approximately \$20M and in 2012 it will be \$4.5M.
  3. Mr. Vogt asked how the MWRD and the IEPA will determine financial needs of specific service areas are and how long programs may be extended based on loan funding being available. Mr. Andres stated that these specific questions need to be discussed and indicated that at this time they are not sure as to how the funds will be allocated. He also stated that the IEPA is open to any suggestions and will work closely with the MWRD to answer those questions.
  4. Mr. Alan Hollenbeck (RJN Group) asked if the IEPA anticipates any problems with the SRF program accommodating multiyear projects that have several pieces over a long period of time opposed to large conventional projects like treatment plants. Mr. Andres stated that SRF funding for smaller multiyear projects is currently being reviewed. He stated that when the IEPA started with their SRF program, they were with large treatment plant projects and others that had fewer moving parts. He stated that the IEPA is looking into a sponsorship type program or an "infrastructure bank" that will allow the responsible entity, being the MWRD or the County, to distribute funds to projects, because the IEPA does not have the staff to administer several smaller projects.
- D. Mr. Allan Berkner, Sewer Systems Evaluations, gave a slide presentation regarding the Lessons Learned from ICAP. The presentation examined specified rainfall intensities/distribution and flow projections, discussed flow measurement and I/I source identification/inspection techniques, improvements in technologies since 1985 ICAP, gave an overview of emerging sewer system evaluation technologies, and made several suggestions for the future.
1. Mr. Weakley stated that ICAP allowed different types of flow monitoring techniques to determine the flow. He believes that the flow monitoring process should be standardized and suggested that the old

ICAP reports be put to the side and allow all municipalities start over to determine their sewer system [wet weather] flow rates. Mr. Berkner stated that there may be municipal engineers that do not want the MWRD to direct them how to do the flow monitoring; however, there must be flow monitoring standardization. Mr. Berkner also expressed his opinion that a big problem with the ICAP program was allowing a population equivalent to calculate the effectiveness of I/I removal. He explained that the municipalities with a denser population had an advantage over the average community with single family homes. The main problem with using the population equivalent was that after the pre-rehabilitation system evaluation reports were completed, the population decreased which skewed the post-rehabilitation flow results.

2. Mr. Weakley stated that flow reductions may have been a result of flow credits and not necessarily the rehabilitated system. He cited an example that changing an open-pick manhole cover allowed the removal of [inflow of] 500 GPD for a given rain event. Also, he wondered if the difference in flow results was not the effectiveness of the rehabilitation but the measurement of different rain events. Mr. Berkner stated that the flow monitoring process took a 30-day snapshot of a pre-rehabilitation rain event and compared it to a post-rehabilitation rain event. He stated that the rain events and antecedent conditions of the two storms were most likely different; therefore, the measured flow reduction may not be fully a result of the effectiveness of repair, and could have been impacted by the differences in the storms. Mr. Berkner stated that some Village Engineers/officials used to wish/"pray" for a one-inch rain spread over 24 hours rather than an inch of rain in one or two hours.
3. Mr. Hollenbeck stated that another challenge under ICAP was that the MWRD design storm required a projection process with a 3-year recurrence interval. He explained that many of the flow monitoring programs were 30-day programs and there will be variation if projections are made. Given the importance of assessing the effectiveness of the rehabilitation and accounting for variation of storm events, more data is required which is why consent decrees across the nation require annual flow monitoring programs. He stated that many of the ICAP flow monitoring programs were 30-day programs done in July resulting in a lack of reliable data. Mr. Berkner stated that engineers were in a difficult situation because they needed to meet the ICAP requirements and the client wanted the meters removed after the 1-inch storm occurred. Mr. Berkner also gave an example of a flow monitoring study that he completed where the goal was 400 GPCPD. He measured 227 GPCPD and is unsure if that reduction was a result of the rehabilitation or the dry weather that has occurred over the last few months.
4. Mr. Hollenbeck stated that several of the rehabilitation programs to comply with ICAP were funded by widely available state and federal grants. However, the grant regulations would not allow lining of the entire sewer or complete rehabilitation of structures. Therefore, point repairs were done because the grant could only be used for what was

leaking. Design life was restored and individual defects were repaired, but it was a challenge to determine flow reduction within the system.

5. Mr. Berkner expressed caution about relying on repair effectiveness numbers when performing a cost effectiveness analysis under ICAP. Some repairs end up having very low effectiveness, well below the assumed effectiveness.
- E. Mr. Nick Menninga, Executive Director, Downers Grove Sanitary District (DGSD), gave a slide presentation on Private Source I/I removal done within the DGSD's service area. The presentation included an overview of the DGSD service area, conveyance and treatment facility, I/I problems, and DGSD's approach to tackle the I/I problems including discussion of related financing and stakeholder buy-in.
1. Mr. Chris Breakey (South Lyons Township Sanitary District) asked how DGSD does rehabilitation work on private laterals under its Building Sanitary Service Repair Assistance Program (BSSRAP). Mr. Menninga stated that typically they do point repairs for services, which includes replacing a portion of the service with PVC and the installation of a cleanout.
  2. Mr. Breakey asked if a portion of the lateral is blocked is it replaced and televised. Mr. Menninga stated that the portion of lateral that contains the blockage will undergo a point repair by replacing the section and installing a cleanout. The entire lateral is televised and if any defects are identified they will be repaired. He stated that under BSSRAP the entire lateral is not lined; only point repairs are done. However, the DGSD enters basements to conduct inspections to ensure that clear water is not entering the system.
  3. Mr. Breakey asked for clarification to the basement inspection. Mr. Menninga stated that inspections are done to ensure that sump pumps are not connected to the lateral and inspect for any other additional sources of clear water entering the system. He stated that sometimes a footing drain connection to the service is found when the lateral is televised. It is then dug up to verify that the connection does not belong and it is disconnected.
  4. Mr. Breakey asked if DGSD offers an option to the homeowner to line the entire service lateral. Mr. Menninga stated that under the BSSRAP, typically the service lateral is not lined and the connection at the main is not replaced. The BSSRAP is considered as a partial I/I removal project, not a complete "zip-up" project.
  5. Mr. Breakey asked if specific areas are identified for "zip-up" projects. Mr. Menninga stated that when areas are identified for entire sewer rehabilitation (using flow metering data and other operational measures for prioritization), the objective of the program is to achieve air tightness from the transition to the interceptor.
  6. Mr. Breakey asked if any problems were encountered using public dollars on private property. Mr. Menninga stated that there have

been no problems. He explained that before the program was developed, 20,000 surveys were sent to all of the DGSD customers asking them if they would be interested in the program. 5,000 surveys were returned, of which over 90% were interested in the program. There was overwhelming public support, and from a legal standpoint BSSRAP is of public benefit. Offering a service is preferable to conducting enforcement, considering the nature of the relationship with your customers, who you are ultimately accountable to.

7. Mr. Breakey stated that he agrees that there is public benefit but stated that he has concerns that municipal officials see it as a private sector problem that should be addressed by the homeowners. Mr. Menninga explained that once an overhead sewer is installed basement backups are much less likely to occur, removing liability on the part of the municipality for a flooded basement.
8. Mr. Hollenbeck asked what is done in the overhead sewer program if an applicant does not have a sump pump in the basement. Mr. Menninga stated that they need to meet the requirements of the I/I program, so any rehabilitation work that needs to be done will get done. The overhead sewer program is intended to cover the cost of a new ejector pit.
9. Mr. Hollenbeck asked if a sump pump is not present in the basement, how the connection of foundation drains to the service lateral is confirmed. Mr. Menninga stated that an inspection is done with a combination of a probe and water hose. If water is seen in the service lateral, then leakage is confirmed. Foundation drain connections are not always detectable.
10. Mr. Hollenbeck stated that it appears that approximately 200 overhead sewers have been done which is about 1% of the homes in the DGSD service area, and asked if they are located in one area or are spread out. Mr. Menninga stated that they are spread throughout the service area.
11. Mr. Hollenbeck asked if there has been a situation where a large number of foundation drains could be observed and evaluated to determine if basement backups occur. Mr. Menninga stated that he has not found foundation drains to be a problem system-wide. However, they are disconnected to remove clear water from entering the system when they are found.
12. Mr. Vogt asked if the programs are funded through the general operations fund or the \$2/month charge. Mr. Menninga stated that the program is funded through the general operations fund. He explained that the sewer bill includes charges of \$1.65/thousand gallons and a flat fee. The total cost of funding the program is about \$2/month out of the \$9.50/month flat fee.
13. Mr. Dale Schepers (Tinley Park) asked what the flow per capita per day is and the reduction of flow encountered through the program. Mr. Menninga stated that flow rate is 100 GPCPD at the treatment plant,

which is 6.9 MGD with 65,000 people in the service area. He stated that historically the highest daily total flow rate has been 60MGD. Wet weather flows to the plant per inch of rain (on an annual average basis) have not changed noticeably since starting these programs. He explained that since the performance of the collection system during storm events is the target the DGSD monitors peak instantaneous flow at many locations in the system. Overflows and basement backups are directly tied to peak instantaneous flows. Total flow in a day doesn't matter as much as instantaneous flow, because the plant has adequately sized treatment units. He also noted that the flow rates occurring at the treatment plant are dampened, while flows measured at metering locations are more representative of system operation where there is more risk of backups and overflows. He stated that there has been typically a 50% reduction in the peak flow rate at locations where I/I program work was conducted to 'zip up' a mini-system.

14. Mr. Schepers asked how flows are benchmarked and the methodology used to determine the flow reduction over time. Mr. Menninga indicated that he can share that information. He also indicated that Baxter and Woodman did a paper at WEFTEC a year ago and showed how the flows were calculated.
15. Ms. Durkin asked how long the DGSD approach of targeting the private sector I/I sources has been in effect. Mr. Menninga stated that development of the programs started in the early 2000's and the programs have been in effect for about 10 to 12 years.
16. Ms. Durkin asked if consent from residents is needed when a specific area is targeted for rehabilitation work. Mr. Menninga stated that it depends on the rehabilitation technique. He cited an example where a contractor wanted to install T-Liners in an area with about 200 houses; it took 6-years to get consent from everyone in the area, greatly slowing progress of the work.
17. Mr. Dring requested clarification as to how the DGSD programs are funded. Mr. Menninga stated that for the BSSRAP it costs about \$500,000 a year and when divided by 20,000 houses it comes to \$2/month. Paying that portion is not an option, it is part of the fixed portion of every sewer bill.
18. Mr. Bill Meyer (Oak Lawn) asked what the average sewer bill is per month. Mr. Menninga stated that including property tax, the average cost is about \$310/year, which includes sewer, sewer maintenance and treatment.
19. Mr. Weakley asked if DGSD is flooded with phone calls requesting a rod-out because the lateral is backed up, or do you require your residents to rod-out their own lateral. Mr. Menninga stated that the DGSD encourages residents to call them first. While the BSSRAP program does not cover maintenance such as rodding, DGSD is thereby able to inform people of the program and its requirements. He stated that part of the reason for the repair program was because

contractors were taking advantage of customers with high prices. Currently, the DGSD has a term contract with a contractor which includes unit prices for repairs and deadlines to complete the work. He explained that it is a 5-year renewable contract, so every year the contractor is motivated to provide good service so the contract is renewed. Increases in cost are tied to the CPI. The amount being spent under the contract can be as low as 1/3 of the individual rates people were paying before the program, due to economy of scale and the professional management of the contract by DGSD.

20. Mr. Weakley asked if the DGSD receives calls in the middle of the night because there is no service. Mr. Menninga stated that the DGSD has a call service after normal work hours and employees on call at all times. If it is an emergency the service will contact one of their employees and they will call and/or visit the resident within 30-minutes.
  21. A question was asked if a resident doesn't take advantage of the DGSD program and decides to do repairs on their own, do they need to get their own contractor or does the DGSD provide one to them. Mr. Menninga stated that they have to get a permit from the DGSD, so at that point DGSD educates the person to use the program. If they insist on working outside the program, they use their own contractor.
  22. Mr. Mark Emory (West Central Municipal Conference/Christopher Burke) asked if the DGSD is a branch of the municipal government or a separate district. Mr. Menninga stated that the DGSD is a sanitary district, like the MWRD. He stated that one of the advantages the DGSD has is that it owns the entire collection system.
  23. Mr. Berkner asked if a resident experiences a sewer backup as a direct result of the sanitary sewer only, are they eligible for the overhead plumbing program. Mr. Menninga stated that any resident is eligible for overhead sewer at any time.
  24. Mr. Mark Toll (Elk Grove Township/Daniel Creaney Co.) asked if the billing rates were raised when the sewer repair program was instituted. Mr. Menninga stated that the flat fee was the result of the sewer repair program. He also indicated that the advantage of the flat fee is that it does not depend on water usage, helping to more closely match revenue with costs.
  25. A question was asked on how water usage is monitored. Mr. Menninga stated that the DGSD gets water meter readings from the water suppliers and assume 8,000 Gallons/month/ household for residents on well water.
- F. Ms. Maureen Durkin gave a slide presentation detailing what was learned from the ICAP and ideas for a new I/I Control Program moving forward.
1. Mr. Hollenbeck stated that there was an abundant amount of grant funds available under the ICAP program; however, that program was

compressed in terms of time schedule, and a municipality could comply with ICAP because the funds were available. Under a program funded by loans or without funding support it may be necessary to lengthen the schedule of the program.

2. Mr. Vogt asked of the potential of the MWRD being the sponsor of a grant or loan program opposed to the program being funded by the individual municipalities. Mr. Hollenbeck added that the IEPA doesn't have the staff to implement an SRF Loan for a large number of small-sized projects; however, if the MWRD were to be involved the numerous projects may be able to receive funding support. Ms. Durkin stated that a program with MWRD sponsorship has been discussed at a conceptual level by staff and is under consideration.
  3. Mr. Vogt reiterated that he would hope that the MWRD would keep a sponsorship funding option open because it would seem to be a better approach to funding a new program.
- G. The next ATP meeting is tentatively scheduled at 1:00 pm on Wednesday September 19<sup>th</sup>, 2012 at the LASMA Visitor Center. The MWRD will keep the ATP Members and COGs advised of the Study Session if/when one is scheduled.