Summary

The information contained in this report directly reflects the steps involved in formulating a watershed action plan. In order to create an effective and meaningful plan, an inventory of the various land uses, pollutants and valuable natural resources is needed.

Macroinvertebrate monitoring was conducted one time, at six sampling stations in the watershed. NEFCO initially selected four monitoring stations, but funding allowed for two additional sites to be sampled. The sampling stations are located throughout the Nimishillen Creek Watershed (Figure 1). Appendix A contains a copy of the Stream Quality Assessment Form for each monitoring station that includes the results of the monitoring, and a description of the location for each site. The monitoring revealed that the waters of the Nimishillen Creek Watershed have relatively fair water quality.

The Potential Pollution Ratings List was revisited during this phase. Revisions to this list included a new title (Land Use Characterization Rating Table), and a different format, making the table more user-friendly. Input collected from local stakeholders combined with rankings from the Ohio Comparative Risk Project (OCRP) resulted in the following top five land uses with the potential for environmental impacts, for the Nimishillen Creek Watershed: industrial land use, off-lot (discharging) home/semi-public sewage disposal systems, failing on-lot home/semi-public sewage disposal systems, oil and gas wells, and gasoline use.

To assist in remediation efforts to improve or preserve water quality, a watershed action plan is in the process of being developed. This action plan will directly reflect the information gathered from other components of this report, especially the ranking of land uses. The action plan will include identified goals, objectives, priority areas and activities to address water quality concerns. Each activity will be associated with suggested responsible parties, possible funding sources, estimated time frames, expected improvements and evaluation procedures. For our purposes in this phase, a model action plan was utilized to help local stakeholders in the Nimishillen Creek Watershed visualize a possible action plan for their watershed. Phase III of the Nimishillen Creek CWMP will include the refinement and completion of the Nimishillen Creek Watershed Action Plan.

NEFCO hosted two planning meetings at the Stark Soil and Water Conservation District (SWCD). The first meeting occurred on March 16, 2000, and the second meeting was on June 8, 2000.

Introduction

The goal of this project is to develop a Watershed Action Plan which will describe possible responses to threats on water quality. By examining current conditions and targeting critical streams for protection and/or restoration and identifying best management practices to reduce the impacts, the Action Plan will act as a useful guide for implementation, as funding becomes available.

This phase of the Nimishillen Creek CWMP has brought the project closer to reaching its goal. Macroinvertebrate monitoring was conducted at six sites within the watershed; priority areas and predominant land uses that have the potential of impacting the waters of the watershed have been identified; and two planning meetings were held in order to

generate input from local stakeholders. These combined components will aid in NEFCO's efforts to improve the water quality of the Nimishillen Creek Watershed by developing a watershed action plan.

I. Macroinvertebrate Sampling

This portion of the report presents water quality data based on the results of macroinvertebrate sampling within the Nimishillen Creek Watershed. According to ODNR, macroinvertebrates are organisms (such as insects, worms, clams) that "lack a backbone and are visible to the naked eye" (ODNR, 1993). The benthic macroinvertebrate community is a component commonly used to determine the environmental quality of a stream. However, in order to obtain more accurate and complete results, more components of the community (i.e. fish, algae, or water quality) need to be tested as well.

Areas were surveyed for macroinvertebrates using the Scenic Rivers Stream Quality Monitoring Program, which was developed by ODNR (ODNR, 1993). Stations 1 (Everhard Rd. and North Main St, North Canton), 2 (off S.R. 800, north of East Sparta) and 3 (at Beck Ave, west of Louisville), were sampled on April 28, 2000, stations 4 (Martindale Park in Plain Twp.) and 5 (Bolivar and I-77), were surveyed on May 4, 2000, and station 6 (Allenford Road, at Taylor Beverage Co.), was monitored on May 15, 2000. Figure 1 indicates the locations of the sampling stations and Appendix A contains copies of the ODNR Stream Quality Assessment and Stream Inventory Forms for each of the six stations. The stations were selected based on their convenient access point, riparian cover, and stream depth and width. Good in-stream habitat (boulders, cobbles and gravel that provide a home for organisms), was also important in choosing a site, as it demonstrated maximum potential for biological communities. It is also important to note that according to ODNR's methodology sampling occurs only in the riffle areas of a stream segment, which may introduce a bias in the results if only sampling one micro-habitat. Ohio EPA's method of macroinvertebrate sampling includes sampling in riffle areas as well as pools and margins. Examining various micro-habitats provides a more accurate representation of the biological community within a stream segment. NEFCO realizes that a bias is inherent in the ODNR methodology. This is accounted for by use of the findings as a preliminary screening of water quality. Ultimately recommendations are prepared for further data collection on other organism groups for a more precise characterization of chronic water quality conditions. For further details on the procedure for macroinvertebrate sampling, please refer to the NEFCO Citizen Stream Monitoring Program Final Report, June 1994.

As mentioned earlier, examination of the benthic macroinvertebrate community is a component commonly used to determine the environmental quality of a stream. Since these organisms are rather restricted to their immediate habitat, they cannot escape changes in water quality. If pollutants impact a stream, a considerable period of time may be required for the macroinvertebrate community to fully recover. Chronic pollution will prevent recovery of the macroinvertebrate community. Therefore, macroinvertebrate surveys can provide information regarding the overall quality of a stream at any given moment. Generally, unpolluted waters support a greater variety of aquatic life and polluted waters support larger numbers of more pollution tolerant organisms. This type of stream assessment takes into consideration all of the factors which can pose threats to aquatic life, such as channelization, climatic change and nutrient enrichment. It cannot specifically identify any pollutant that is impacting the macroinvertebrate community, though.

The results of the macroinvetebrate surveys at each of the selected stations ranged from fair water quality, at four of the six stations, to good water quality at the remaining two sampling stations. Figures 2 and 3 illustrate the type and abundance of macroinvertebrates recorded at each of the six stations. They also include the taxa group that the macroinvertebrates belonged to. Group one taxa include macroinvertebrates that are the most pollution-sensitive organisms found in good quality water; group two taxa include organisms that are somewhat pollution tolerant, and can be found in good or fair quality water; and taxa found in group three include organisms that are pollution tolerant and can be found in any quality of water. Caddisfly larvae, which are classified as group one taxa, were present at every site, and were the most abundant organism in five of the six stations evaluated. Station four had the highest count of blackfly larvae (group three taxa). Aquatic worms (group three taxa) and midge larvae (group three taxa) were also present at all six stations. The highest number of aquatic worms were found at stations 1, 2 and 5, and the highest counts of midge larvae were found at stations 1 and 6. Stations 2 and 4 contained the greatest diversity of macroinvertebrates, with ten different types of organisms per station. Station 3 was comprised of nine different types of organisms, stations 1 and 6 had eight and station 5 had seven.

Table 1 presents the cumulative index values and stream segment condition for each site surveyed. Stations 1, 3, 5 and 6 revealed fair stream quality, with a cumulative index value ranging from 12 to 16, based on the composition of organisms found in the sampling. The results of the remaining two stations (2 and 4) indicated good stream quality, with values of 19 and 21 respectively. A diversity of organisms were represented at these two stream areas, which is a sign of a healthy stream since a good quality stream can support a variety of macroinvertebrates.

Table 1
Cumulative index values and stream segment conditions based on macroinvertebrate surveys at selected sites

Station Number	Sample Date	Stream	Cumulative Index Value*	Stream Segment Condition**
1	4/28/00	Nimishillen Creek West Branch (Everhard Rd. and North Main St., North Canton)	16	Fair
2	4/28/00	Nimishillen Creek Mainstem (off S.R. 800, north of East Sparta)	19	Good
3	4/28/00	Nimishillen Creek East Branch (at Beck Ave., west of Louisville)	16	Fair
4	5/4/00	Nimishillen Creek Middle Branch (Martindale Park, Plain Twp.)	21	Good
5	5/4/00	Hurford Run (Bolivar and I-77)	12	Fair
6	5/15/00	Sherrick Run (Allenford Rd., at Taylor Beverage Co.)	15	Fair

*Stream Quality Assessment (Source: ODNR, Stream Quality Monitoring Manual)
**Excellent: >22, Good: 17-22, Fair: 11-16; Poor: <11.

The results of the macroinvertebrate sampling conducted at the six stream sites indicates relatively fair water quality with an average cumulative index value of 16.5. Station 5 had the lowest score of 12. This site is situated in an industrial area, surrounded by high traffic roads. Although it had an average riparian cover and an acceptable in-stream habitat, the stream was heavily littered with trash, tires, bricks,

cans and bottles. Identified potential threats to water quality at station 5 include sedimentation and industrial runoff. This site is also downstream from two major industrial dischargers and a number of storm sewers that drain a major steel mill and refinery (Ohio EPA-NEDO, pers. comm. with Dave Stroud). The stations with the highest scores were 2 and 4. Station 2 had a good riparian habitat, good in-stream habitat and good riffles. The higher score may be due to the location of the site. Station 2 is situated in a rural area downstream from the urban/industrial area of South Canton. This gives the stream a chance to recover from some of the impacts that may occur upstream of Station 2. Identified potential threats to water quality at station 2 are sedimentation and upstream industrial and urban runoff. Station 4 had the highest score of all six sites. This high score may be attributed to a man-made lake on Columbus Road, upstream from station 4. This lake may act as a sediment basin, as well as a cleansing reservoir for any contaminants that enter the lake from the Nimishillen Creek Middle Branch. Identified potential threats to water quality at station 4 are sedimentation and lack of good riparian zone cover.

The macroinvertebrate sampling was useful in helping to determine the environmental quality of the streams in the Nimishillen Creek Watershed. The monitoring results revealed that four of the sampling sites had fair water quality, and two had good water quality. NEFCO staff took the median of all scores from the six sites, giving the streams in the watershed an overall evaluation of fair water quality. Although most of the sites had good riparian cover, and riffle activity, this evaluation may be attributed to the predominance of industrial and urban land uses within the watershed. Most of the potential threats to the streams at each site were sedimentation, urban-runoff and industrial-runoff.

II. Land Use Characterization Rating Table

Phase I of the Nimishillen Creek CWMP included the initial attempt to rate the potential pollution sources in the Nimishillen Creek Watershed by utilizing a Pollution Potential Ratings Table. A list of criteria was used along with the table to help rate the various potential pollution sources and indicate the level of impact the potential pollution source has on each subwatershed. Using both the Pollution Potential Ratings Table and the list of criteria, local stakeholders were asked to rate each potential pollution sources within the watershed. However, local stakeholders found it difficult to rate pollution source impacts without any documentation to guide them and support their ratings. They also found the table incomplete and confusing, especially with the criteria on a separate page. Some local stakeholders found the table misleading as certain land uses were interpreted as explicit pollution sources to the water quality of the watershed.

During Phase II of the Nimishillen Creek CWMP NEFCO took the input from local stakeholders into consideration and revised the Pollution Potential Ratings Table to make it more comprehensive and user-friendly. The title of the table was changed to: “Land Use Characterization for each Subwatershed of the Nimishillen Creek Watershed” (refer to Appendix B). This redirected the focus of the table towards predominant land uses and their influence on the watershed. In order to better facilitate an evaluation of land use and its influence, the land uses and criteria were put on the same page, making it easier to reference the criteria and rate the land uses. NEFCO also added references to figures, tables and appendices in the Phase I draft report to assist the ranking of each listed land use within the subwatersheds.

Using the revised ratings table and the Phase I draft report, local stakeholders were more amenable to contribute further in ranking the land uses within the watershed.

Input was received from stakeholders through mailouts, planning meetings and individual meetings with local agencies and citizens. The results of the stakeholder feedback can be found in Appendix B.

Ranking of 25 Land Uses

The previous discussion on Land Use Characterization evaluated the potential for each land use to impair water quality on a subwatershed-by-subwatershed basis. This analysis continued with a ranking of the 25 identified land uses in the watershed. To accomplish this, NEFCO applied the existing land use rankings that were developed under the Ohio Comparative Risk Project (OCRP). The background of the OCRP and its "ranking of 45 potential threats to human health, ecosystems, and quality of life in Ohio" (Ohio EPA, July 1997, p. 1) can be found in Appendix C.

Each of the 25 identified land uses in the watershed was classified into one of seven OCRP-ranked groups of the 45 threats (Table 2). In instances where a land use corresponded to more than one OCRP-ranked group, the group with the highest rank was chosen–since the higher ranked groups represent greater risks. For example, although there is construction and demolition debris (OCRP Group 6) from construction sites, uncontrolled development (OCRP Group 2) can also correspond to construction sites and pose a greater threat. Consequently, this land use corresponded to OCRP Group 2.

The OCRP group number (1 through 7) was reassigned in reverse order to match the ordering scheme for the Land Use Characterization Ratings that NEFCO developed (higher numbers in the Ratings indicate a greater potential to impair water quality; therefore, it was necessary for the OCRP ranked group numbers to reflect this). The reassigned OCRP group number was used as a weighting factor (Table 3). It was multiplied by the sum of all five Ratings that were developed for a given identified land use. The product of this multiplication is the ranking score (Table 3). Since the OCRP was used to achieve these results, higher ranking scores suggest the land use with a greater threat to ecosystems, human health and the general quality of life in the watershed. The final ranked list of the 25 identified land uses in the watershed is shown in Table 4 along with the Land Use Characterization Ratings.

Since industrial land use areas ranked the highest (for the entire watershed), they are presumed to present the greatest overall risk to the watershed. Streams within Subwatersheds 1, 2, and 4 have the greatest potential for being impaired by industrial land use. Off-lot (discharging) home/semi-public sewage treatment systems and failing on-lot systems ranked next highest in the watershed. Future actions could include better management of these systems, especially in the subwatersheds with a high Land Use Characterization Rating for these sources.

Oil and gas wells and gasoline use ranked third in the watershed, i.e., they each received the same ranking score. Oil and gas wells have a high potential to impair the waters of the entire watershed, but especially Subwatersheds 3 and 4. Gasoline use has a high potential to impair the waters of Subwatersheds 2, 3 and 4. Construction sites ranked fourth; and have a high potential to impair the waters of Subwatersheds 2, 3 and 4. Industrial dischargers ranked fifth in the watershed. Agricultural areas ranked sixth. Trucking activity and related maintenance ranked seventh. Oil and Gas Pipelines ranked eighth. Mining activity ranked ninth in the watershed. Landfills and dumps ranked tenth. Nurseries/greenhouses and landscaping operations and golf courses ranked eleventh. Impervious areas ranked twelfth. Semi-public wastewater

treatment plants ranked thirteenth in the watershed. Public wastewater treatment plants (package plants), lawn and garden/household maintenance activity and excess nutrients from natural sources ranked fourteenth. Salt storage and seasonal spreading of salt ranked fifteenth. Fuel oil use ranked sixteenth, and polychlorinated biphenyls (PCBs) ranked seventeenth in the watershed.

These results are consistent with results found in the U.S. EPA report, The National Water Quality Inventory: 1998 Report to Congress (U.S. EPA, 1998), and Ohio EPA 1996 Ohio Water Resource Inventory (305(b) report) (Ohio EPA, 1996). For instance in the U.S. EPA (1998) report it is stated that a number of states "detected more subtle impacts from nonpoint sources, hydrologic modifications, and habitat alterations as they reduced conspicuous pollution from point sources". This is consistent with the results of this report, depending on the type of land uses in the watershed. It seems that the more urbanized areas of the watershed experience more point source pollution and the more agricultural/rural areas experience more nonpoint source pollution. The Ohio EPA (1996) verifies this observation as it lists industrial point sources, urban runoff/storm sewers and municipal point sources as sources of impairment in the urban/industrial areas of the watershed (Nimishillen Creek mainstem, Hurford Run, Sherrick Run, West Branch Nimishillen and East Branch Nimishillen). Whereas streams such as the Middle Branch Nimishillen and Swartz ditch (located in more agricultural/rural areas of the watershed) list nonirregated crop production and channelization as sources of impairment.

Abandoned drinking water wells were mapped late in this phase, and therefore, was not ranked by local stakeholders (refer to Appendix D for map and list of abandoned drinking water wells). After viewing the map NEFCO observed a potential for abandoned drinking water wells to impair the waters of Subwatersheds 1, 2 and 3. The abandoned wells could provide a conduit for pollutants to travel via ground water and subsequent discharge (potentially) to surface water through streams and lakes discharge.

The mapping of registered underground storage tanks and leaking underground storage tanks could not be done due to the high number of tanks throughout the watershed. Based on 1997 BUSTR data (Division of State Fire Marshall, Bureau of Underground Storage Tank Regulation), there are 637 registered underground storage tanks in the watershed, and 640 leaking underground storage tanks. Refer to Appendix E for a complete list of both registered and leaking underground storage tanks within each political jurisdiction of the watershed. The data from Appendix E suggests that the City of Canton contains the majority of both registered and leaking underground storage tanks with 446 (70%) and 476 (74%) respectively. Since the majority of the City of Canton is found in a Subwatersheds 1 and 2, both registered and leaking underground storage tanks have a high potential to impair the water quality in both subwatersheds. The City of North Canton has the second highest number of both registered and leaking underground storage tanks, with 134 (21%) registered underground storage tanks, and 96 (15%) leaking underground storage tanks. Refer to Appendix E for a sample list of both registered and leaking underground storage tanks. A complete list of registered and leaking underground storage tanks is available by NEFCO upon request.

Appendix F contains the ranking of 25 land uses for each of the four subwatersheds. Table 4 and Appendix F are significant environmental planning tools for the Nimishillen Creek watershed. Future actions could use this information in conjunction with all of

the figures and tables contained in the analyses, to identify sites that should be sampled for the presence of contaminants. If a site is causing a negative impact on the watershed, targeting efforts to contain and clean-up that site may be an effective plan. Also, local governments can use Table 4 and the tables in Appendix F and this analysis to protect/restore the water quality in their portion of the watershed when developing/revising zoning ordinances. These activities may help reduce the risks to human health, ecosystems, and quality of life in the watershed, and the quality of water flowing from the Nimishillen Creek and its tributaries should continue to improve.

During this phase NEFCO experienced much progress in refining the priority areas within the Nimishillen Creek Watershed. Revisions to the Land Use Characterization Table (formerly the Potential Pollution Sources Rating List), planning meetings and individual meetings with key stakeholders enabled NEFCO to determine which land uses have the potential to impact the streams in the watershed. Industrial land uses, off-lot (discharging) home/semi-public sewage treatment systems, failing on-lot systems, oil and gas wells and gasoline use were rated the top five land uses with the potential to environmentally harm the waters of the Nimishillen Creek Watershed. This information is vital to the development of an effective action plan to set goals and objectives that could be a useful guide for implementation, as funding becomes available.

III. Watershed Action Plan

A watershed action plan is a process to strategically focus activities and resources on watershed issues. The ultimate goal for a watershed action plan is the restoration or preservation of beneficial uses within the watershed. These include unrestricted consumption of fish and wildlife and drinking water, restoration of aquatic and terrestrial biotic communities and their habitats, and unrestricted recreational and commercial uses (Cuyahoga River Remedial Action Plan, 1992, pp. 2-19). Every watershed is unique and strategies to protect and/or restore them should reflect this. Each watershed has specific characteristics and problems related to a variety of factors, such as geography, geology, population density, economics, and present water quality. To assist in the plan's effectiveness, an inventory of possible sources of pollution in the watershed were identified from previous reports and recent research, and evaluated based on their relative contribution of pollutants. This is important since the water quality at any point in a stream is the product of all natural and human activities in the drainage area above that point (Ohio EPA 1997, pp. 2-3).

The development of a watershed action plan for the Nimishillen Creek Watershed involves an itemization of the problems, priorities and activities the local stakeholders would like to address. It provides guidance by outlining a strategy to address water quality concerns. The process of developing a watershed action plan elicits a comprehensive understanding of water resources and the various interests involved. As a result of this plan, NEFCO hopes to promote a better perception of pollution sources and attainable solutions. This will pave the way for the next phase–feasibility and implementation; once additional funding is available.

NEFCO has begun the process of developing an Action Plan for the Nimishillen Creek Watershed . The results have been collected from the public meetings and the ratings from the Land Use Characterization Table. An action plan model was used to give stakeholders an idea of what the action plan for their watershed will resemble (refer to

Appendix G). This model was used for other watersheds with similar land uses, and thus, possess similar potential pollution sources. Previous reports and additional information, pertaining to nonpoint and point source pollution, will also aid in the development of this plan.

During Phase II of the Nimishillen Creek CWMP, NEFCO collected input from Nimishillen Creek Stakeholder meetings and local officials, as to what the problems are within the watershed. By identifying the problems, steps that follow will involve the refinement of goals, objectives, actions and priority areas. After each objective is determined, one or more actions will be listed to achieve the desired goal. Possible funding sources, estimated time frames, expected improvements, and evaluations for each action will be included during the development of the plan.

IV. Technical Advisory Committee Meeting Summaries

This section of the report provides a summary of the results from two planning meetings held during Phase II of the Nimishillen Creek CWMP. The purpose of the first meeting on March 16, 2000, was to discuss the findings and conclusions of the Nimishillen Creek CWMP Phase I report; give Ohio EPA an opportunity to explain their latest water quality analysis; introduce the Nimishillen Creek Watershed Action Plan; and discuss upcoming macro invertebrate monitoring. NEFCO hosted a second meeting on June 8, 2000, which discussed the introduction of the Nimishillen Creek Watershed Action Plan (there was not enough time at the previous meeting to introduce the Action Plan); discussed the findings of the macroinvertebrate monitoring; and revisited and refined the land use characterization list.

The Nimishillen Creek CWMP - Phase II planning meetings were held on March 16, 2000 and June 8, 2000 at the Stark Soil and Water Conservation District. Appendix H contains copies of the meeting agendas, notices, news releases, and attendance sheets.

March 16, 2000 Stakeholder Meeting Summary:
The planning meetings continue to address various concerns and issues regarding the Nimishillen Creek Watershed. Mr. Paul Anderson generated a lot of interest when he discussed the water quality analysis that the Ohio EPA is working on. He reported primarily on the water chemistry of the Nimishillen Creek Mainstem and East Branch Nimishillen Creek. Overall, Mr. Anderson reported these streams within the Nimishillen Creek Watershed as having fair water quality. He explained that the waters within the Nimishillen Creek Watershed are experiencing high levels of phosphorus, and that the data suggests that one of the reasons behind these high levels may have to do with the City of Canton Wastewater Treatment Plant (WWTP). The data illustrated a definite increase in phosphorus after the Canton WWTP, which suggests that the WWTP is connected to the high levels of phosphorus. However, the data also shows the level of phosphorus maintains its high levels ten miles downstream from the WWTP. This suggests that there may be other contributors besides the Canton WWTP that are causing the levels of phosphorus to rise. If the high levels of phosphorus were only attributed to the Canton WWTP the level of phosphorus would eventually decrease through natural stream assimilation.

Tracy Mills from the Canton Water Pollution Control Center mentioned that J&L Steel is no longer an industrial discharger in the Nimishillen Creek Watershed as they are discharging to the Canton WWTP.

When discussing the Potential Pollution Sources Rating Table, most of the input that NEFCO experienced was regarding its structure. Some stakeholders thought that the table would be more representative of the watershed if the potential pollution sources were subdivided into smaller categories. For example, instead of grouping all types of agriculture into one category, the watershed would be better characterized if agriculture was divided into subgroups of different types of agriculture (i.e. cropland, animal husbandry, pasture etc.). Some local stakeholders found the table (the title, in particular) misleading as certain land uses were interpreted as explicit pollution sources (rather than potential), to the water quality of the watershed. They were concerned that the report, by rating certain land uses as having high potential pollution within the watershed also inferred an actual impact on the streams.

Another concern that local stakeholders had for the Potential Pollution Sources Rating Table was that there was a lack of justification for ratings, and that each potential pollution source needed a list of reasons for or rationale behind each rating. NEFCO explained that the agency did distribute a list of criteria to use as a rationale behind each rating. However, the list of criteria was on a separate page from the table and may have been overlooked by some stakeholders.

It was suggested by a stakeholder that professional opinions be used when rating each potential pollution source. Generating input from a local agency, key representative or public official that possess more knowledge regarding a particular potential pollution source may reduce the margin of error in the ratings. Another local stakeholder thought that in order to accurately rate a potential pollution source, an example of a particular source and its ranking is needed. For example, construction sites are ranked 4th in Subwatershed 4, but what can this ranking be compared to in order to verify its accuracy? NEFCO explained that having such data would make the process a lot easier, however, this data is not available. NEFCO went on to explain that it was essentially starting from scratch in terms of collecting this type of data.

Since the above agenda items took longer than planned, the remaining items were tabled until the next planning meeting in June.

After the March 16, 2000 meeting, NEFCO took all concerns of the local stakeholders regarding the Potential Pollution Sources Rating Table into consideration and made the following revisions: 1) changed the title to: Land Use Characterization for each Subwatershed of the Nimishillen Creek Watershed; 2) put the land uses and criteria on the same page, making it easier to reference the criteria; 3) added references to figures, tables and appendices in the Phase I draft report to use for the ranking of each listed land use within the subwatersheds; and 4) met with various local agencies for their input in identifying priority areas within the watershed.

June 8, 2000 Stakeholder Meeting Summary:
An introduction to Phase II of the CWMP began the second planning meeting. This included stating the purpose of the Action Plan, and addressing the various elements of Phase II of the CWMP, such as the development of an Action Plan; macroinvertebrate

monitoring; the land use characterization table; hosting planning meetings; and producing a final report.

The Action Plan model was also introduced. NEFCO staff explained the importance of the Action Plan to the process. NEFCO went on to explain that it is a tool that identifies where and what priorities are in the watershed, and how they can be dealt with.

The next item discussed at this meeting was the Land Use Characterization Table. This section was used to explain the changes that NEFCO staff had made to the table to make it more user friendly. NEFCO staff then discussed the individual meetings that were held with certain key stakeholders within the watershed. NEFCO staff met with the following stakeholders during the month of May: Mr. Bob Somrak of the Stark County Health Department; Mr. Andy Bayhem of the Stark Soil and Water Conservation District; Mr. Paul Anderson and Mr. Bryan Schmucker of the Ohio EPA-NEDO; Mr. Tracy Mills and Mr. John Leindecko of the City of Canton Water Pollution Control Center; Mr. Bruce Williams of City of Canton Planning Department; Mr. Conrad Moeller and Mr. Michael Armogida of the Stark County Sanitary Engineers Office; Mr. Karl Lucas of Stark County Regional Planning Commission; Mr. Jeff Dutton, Plain Township Administrator; Mr. Dean England of Drainage Service and Supply; Mr. Jim Pastore, owner of Park Farms; and Mr. Jan Lukens, maintenance manager of K.W. Zellers & Son, Inc. These meetings were a necessary step in identifying both land uses with the potential for environmental impact and areas of concern in which these land uses are predominant.

NEFCO staff explained that changes were made to the Land Use Characterization Table after these meetings, and reviewed each land use and the changes that were suggested. Ms. Mary Gibson expressed concern with the Land Use Characterization Table ratings for agriculture. She believes that the ratings for agriculture as a potential pollution source within the watershed were too low, especially for subwatershed 3. Ms. Gibson is concerned with the impact that a poultry farm operation has on the watershed and feels that more attention should be directed toward dealing with such problems as agricultural runoff and the total impact that this poultry farm operation has on the watershed.

The refinement of the Land Use Characterization Table was explained to the stakeholders during the meeting. NEFCO staff explained how the land use characterization scores was combined with rankings from the Ohio Comparative Risk Project (OCRP). Each land use from the Land Use Characterization Table corresponded to one of the OCRP ranked groups scores. NEFCO staff went on to explain that according to the OCRP the higher ranking scores indicate the potential pollution source with a greater threat to ecosystems, human health and the general quality of life in the watershed. NEFCO reviewed the top five land uses in each subwatershed based the OCRP ratings.

Recent macroinvertebrate monitoring was discussed. NEFCO explained how this type of monitoring is important to the process. NEFCO explained how monitoring sites were chosen, where the sites were and when they were monitored. NEFCO reported the results of the macroinvertebrate monitoring and that overall, the monitoring results revealed fair water quality within the watershed. Hurford Run was reported as having the lowest scores, and the Middle Branch Nimishillen Creek had the highest.

Mr. Bryan Schmucker from the Ohio EPA-NEDO explained that Hurford Run (and other streams in the watershed) most likely has a high metal content, especially zinc. He went on to explain that what Hurford Run really needed was a good flushing. Mr. Schmucker suggested performing a sediment profile for future testing of the water quality of the streams in the watershed. NEFCO staff agreed that this type of test would present more precise and detailed results as to the water quality of the streams because it explains what the streambed consists of. However, this procedure is costly and not feasible for this particular study.

Ms. Mary Gibson suggested that NEFCO compare its results with the results from a water quality section 319 grant report on the Middle Branch Nimishillen Creek done by the Stark SWCD and Stark County Health Department.

Mr. Gary Connor of ME Companies, asked why NEFCO sampled so close to municipalities and industrial areas. He said it may explain the low scores the agency experienced when monitoring. Mr. Connor suggested that NEFCO monitor other areas of the streams, such as the headwaters. NEFCO explained that it would be doing additional monitoring in the next phase, and that the agency would like to monitor other sites if they aren't too difficult to find.

One stakeholder inquired about the cost of macroinvertebrate monitoring. NEFCO staff reported it costs approximately one-thousand dollars per site. Another stakeholder asked if the organization would take private donations towards the reports. NEFCO staff explained that this opportunity would have to be discussed with the agency's executive director.

Mr. Tracy Mills from the City of Canton Water Pollution Control Center introduced the possibility that the City of Canton may be interested in contributing funds towards additional macroinvertebrate monitoring. NEFCO staff expressed interest in Mr. Mills potential offer and said that the staff would contact him in the near future.

Mr. Gary Connor, inquired about whether NEFCO was available to do reports for individual communities. NEFCO explained that it is available to do such reports, but would not be able to do work such as hydrologic modeling.

NEFCO staff concluded the meeting by outlining future steps in Phase III of the Nimishillen Creek CWMP. NEFCO mentioned refining the goals and objectives of the action plan and conducting a cost feasibility analysis during the next phase of the CWMP. NEFCO staff also explained that additional macroinvertebrate monitoring would be done, as well as, two additional planning meetings.

The Nimishillen Creek Watershed Stakeholder meetings served as a key ingredient to the success of the Watershed Action Plan as they orchestrate the team approach to solving the water quality problems in the watershed. This local teamwork was apparent during this phase of the Nimishillen Creek CWMP. The two planning meetings that NEFCO held in the last three months generated a lot of progress in a limited amount of time. With the input received from local stakeholders, NEFCO was able to target priority land uses and areas of concern within the watershed, which is key information needed to develop an action plan. NEFCO is pleased with the interest that stakeholders have exhibited by attending planning meetings and contributing their input. NEFCO hopes to continue this relationship with local stakeholders by holding future

meetings and enabling NEFCO to further our efforts in preserving/restoring water quality in the Nimishillen Creek Watershed.

Conclusion

The intent of the Nimishillen Creek Watershed Action Plan is to protect and/or restore the water quality of the Nimishillen Creek Watershed. When completed, the Watershed Action Plan will act as a useful tool and forum for gathering public support and funding for future efforts. Strong partnerships between regulatory agencies, planning organizations, local governments and others with an interest in the watershed is needed to assure success of the plan.

Much was learned during this phase of the CWMP. For instance, NEFCO came to appreciate the value of communicating with local stakeholders and of gaining important knowledge about watershed conditions through seeking local input. These lessons help toward achieving a common understanding among interested parties and a unified effort toward reaching meaningful goals. The process also helps toward understanding the strengths of and limitations on the stakeholders in trying to meet the goal of ensuring clean water. The Action Plan will serve to overcome the obstacles in knowing what activities to undertake and when to seek funding for them. While many challenges remain, stakeholder involvement is laying a good foundation upon which to build.