

Phase 2 Executive Summary

North Bay Watershed Stewardship Plan



December 2004

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(located on CD in back-cover)

APPENDIX A: DATABASE OF EXISTING AGENCY AND STAKEHOLDER PROJECTS AND PROGRAMS

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APPENDIX C: DATABASE OF CANDIDATE PROJECTS

APPENDIX D: DATABASE OF ATTRIBUTE CODES

OVFRVIEW

The North Bay Watershed Association (NBWA), in cooperation with its member agencies and its Watershed Council, is conducting a multi-year effort to develop a Watershed Stewardship Plan (WSP) for the North Bay - more specifically the areas of eastern Marin, southern Sonoma, and a central portion of Napa counties draining to San Francisco and San Pablo bays. The purposes of this effort are as follows:

- To gain consensus among local agencies and stakeholders regarding the long-term goals and objectives related to water supply, water quality, flood protection, habitat enhancement, and recreation.
- To compare existing conditions in the North Bay > watershed area with resource area goals and objectives to define the projects and actions that are needed to achieve the goals and objectives in a timely, cost-effective manner.
- To gain consensus among local agencies and > stakeholders regarding the relative importance of the identified projects and actions and the priorities to be followed in implementation.
- > To develop an implementation plan that coordinates with other local and Bay Area integrated water resource and watershed planning activities to establish strategies and partnerships for funding and implementation of the highest priority projects.

This Executive Summary describes the results of the Phase 2 work, including compiling of existing projects and programs, developing a GIS database, performing a gaps analysis, determining watershed needs, and finally developing candidate projects to meet those needs. This Phase 2 Executive Summary is a continuation of the efforts completed and described in the Phase 1 Executive Summary (October 2003). The anticipated work to be completed for Phase 3 of the Watershed Stewardship Plan is described in the final section of this Executive Summary.

"Water is the most critical resource issue of our lifetime and our children's lifetime. The health of our waters is the principal measure of how we live on land." -Luna Leopold

PHASE 2 SUMMARY

Phase 2 of the North Bay Watershed Stewardship Plan focuses on the comparison of watershed goals and objectives with existing conditions, projects, and programs. This effort led to the identification of 43 Candidate Projects to meet the needs of the North Bay Watershed with regard to water supply, water quality, flood protection, habitat enhancement, and recreation. This document serves as an Executive Summary of these Phase 2 efforts. The attached CD

contains the Appendices to this **Executive Summary** which are the databases And and the second second Executive Summ

developed as a result of Phase 2 activities:

Appendix A: Database of Existing Agency and Stakeholder Projects and Programs provides nearly 300 entries related to water supply, water quality, flood protection, habitat enhancement, and recreation within the NBWA region.

Appendix B: Additional Existing Stakeholder Projects and Programs provides data on projects and programs that were not able to be compiled into Appendix A, but should be included during the first round of database updates.

Appendix C: Database of Candidate Projects provides over 40 projects and programs developed as a result of Phase 2 activities to meet the remaining needs of the North Bay Watershed with regard to the five resource area objectives.

Appendix D: Database of Attribute Codes provides a key for deciphering the codes and abbreviations used in the databases for assistance with guerying and updating.



1. INTRODUCTION

1.1 ABOUT NBWA

The North Bay Watershed Association started in 2000 as a coalition of fourteen public agencies responsible for water supply, wastewater treatment, and watershed management activities in eastern Marin and southern Sonoma counties. In 2002, the first agency from Napa County, the Napa Sanitation District, became the fifteenth agency to join NBWA (see Figure 1-1). The association has already completed studies to evaluate the feasibility of large scale regional water recycling and the reduction of toxic pollutants such as mercury. Other technical studies and creek restoration projects are currently being conducted. One of the highlights for the association is an annual spring conference attracting top state and federal watershed experts to share the latest strategies for solving the technical, institutional and funding issues facing agencies responsible for watershed protection and enhancement.

The mission of NBWA is to facilitate partnerships across political boundaries that promote stewardship of the northern San Pablo Bay watershed resources. This mission is accomplished by meeting the following goals:

- > Bring together local agencies to work cooperatively and effectively on issues of common interest.
- > Be proactive on watershed based regulations, which increasingly affect areas beyond traditional political boundaries.
- > Work cooperatively to increase eligibility for watershed based funding.
- > Maximize effective use of resources.
- Enhance NBWA's influence on local, state and federal policies and programs.
- > Educate communities about the importance of watershed stewardship.

The governing body for NBWA is the Board of Directors, which is composed of one representative from each member agency. The Board adopts an annual work plan and budget and approves all contracts and commitments of the association. One of the member agencies, Marin Municipal Water District, acts as the fiscal agent for NBWA. The Board has appointed an Executive Director responsible for the administration of NBWA activities and coordination of the three technical committees. An Administrative Steering Committee is made up of management staff from member agencies and acts as advisor to the Executive Director on day-to-day management issues. The three technical committees, Water Quality, Habitat and Flood Protection, and Integrated Water Resources, are comprised of staff from the member agencies and are tasked with meeting the goals of the association. The Watershed Council is advisory to the Board of Directors and its members include representatives from the local community and representatives from state and federal resource agencies.

NBWA MEMBER AGENCIES:

- Central Marin Sanitation Agency
- County of Marin
- Las Gallinas Valley Sanitary District
- Marin County Sanitary District #5
- Marin County Stormwater Pollution Prevention Program
- Marin Municipal Water District
- Napa Sanitation District
- North Marin Water District
- Novato Sanitary District
- City of Petaluma
- City of San Rafael
- City of Sonoma
- Sonoma County
- Sonoma County Water Agency
- Sonoma Valley County Sanitation District

Figure 1-1: NBWA AREA MAP







1.2 DEVELOPMENT OF THE WATERSHED STEWARDSHIP PLAN

The idea for a North Bay Watershed Stewardship Plan started with the NBWA Habitat and Flood Protection Committee. Several local and regional efforts had addressed habitat enhancement and other environmental issues facing areas of the North Bay, but no plan existed that addressed all five of the resource areas of interest to NBWA agencies. As such, NBWA developed the Watershed Stewardship Plan to provide a framework for protecting and enhancing the natural resources within the NBWA region of the North Bay. Since the Phase 1 process began prior to Napa Sanitation District's joining of NBWA, the agency was not included as part of Phase 1 activities. Napa Sanitation District is, however, a part of all the Phase 2 activities described in this Executive Summary.

The Watershed Stewardship Plan used a consensus-based approach to define the desired future state of the watershed (Phase 1) and to provide recommended actions necessary to achieve that state. The actions are presented in the form of candidate projects (Phase 2) and will be further refined into prioritized projects and policies (Phase 3). Consensus will be pursued among NBWA agencies and also among the diverse group of stakeholders represented by the Watershed Council. This approach will (a) ensure that NBWA agencies work together to cooperatively improve the conditions of the watershed for the least possible cost and (b) provide the greatest potential for state and federal funding, which typically requires a watershed and/or regional approach to defining optimum solutions to water supply, water quality, flood protection and habitat/recreation enhancement issues.

The development of the Watershed Stewardship Plan is occurring over three years to conform to NBWA's annual budget and to allow time to achieve consensus among NBWA agencies and the Watershed Council. The three years have been translated into three phases as shown on the Figure 1-2.

1.3 REVIEW OF PHASE 1

Phase 1 included a visioning process where workshops were held with the Habitat and Flood Protection Committee, the Watershed Council, and other interested parties to define goals along with the objectives for the five resource areas shown in Table 1-1. The objectives listed in Table 1-1 have been slightly modified from those reported in the Phase 1 Executive Summary. A few of the Phase 1 objectives were combined to streamline the Phase 2 process, but none were completely eliminated.

Phase 1 also included a definition of the regulatory setting related to the five WSP resource areas and the geographic setting related to the subwatersheds within the study area. Finally, Phase 1 identified the existing conditions, primarily issues, but also some of the existing programs and policies that impacted each of the five WSP resource areas.



1.4 PHASE 2 APPROACH

Phase 2 built upon the preliminary examination of existing conditions in Phase 1 by conducting individual agency project identification meetings. From these meetings, existing projects and programs were compiled into a Geographic Information System (GIS) database. State, federal and regional stakeholder projects and programs were also included in the database as a result of input from the Watershed Council. This database served as the basis for conducting a gaps analysis and watershed needs assessment. The gaps analysis was conducted by comparing existing projects and programs against the goals and objectives outlined as part of Phase 1 of the WSP process. Candidate projects were then developed based on the needs determined for each of the watershed resource areas. This process will be described in greater detail throughout the subsequent sections of this Phase 2 Executive Summary.

The final phase of WSP development, Phase 3, will involve continuation of the consensus building approach to obtain agreement on the project priorities. Phase 3 will also involve the definition of partnerships and funding strategies needed to implement the highest priority projects in a timely manner. These activities have not yet been completed and as such will not be described within this Phase 2 report.



Tab	le 1-1: RESOURCE AREA OBJECTIVES
Wate	er Supply (WS)
WS1	Provide a sustainable potable water supply to meet the long-term needs of the watershed's residents, local industry, and agriculture, while protecting natural resources.
WS2	Establish groundwater management practices to avoid overdrafts and ensure a long-lasting, beneficial use of groundwater resources.
WS3	Maximize the use of recycled water to offset potable and non-potable water needs.
WS4	Optimize water conservation to offset potable and non-potable water needs.
WS5	Support efforts to monitor surface water flows to identify instream water levels and associated timing necessary to maintain a healthy aquatic and wildlife habitat.
Wate	er Quality (WQ)
WQ1	Support efforts to protect receiving waters from pollution to comply with current and future water quality regulations and maintain healthy aquatic systems.
WQ2	Support efforts to protect surface and groundwater supplies to enable compliance with all applicable drinking water regulations.
WQ3	Support coordination or collaborative efforts to monitor surface and groundwater quality to identify point and non-point source pollution sources.
WQ4	Promote coordination to implement best management practices (BMPs) related to water quality issues.
WQ5	Work collaboratively to remove impaired water body designations.
WQ6	Implement measures to manage and reduce erosion, sedimentation, and refuse accumulation in streams.
WQ7	Maintain and, where possible, restore streams to a state of geomorphic equilibrium in order to avoid excessive erosion and sedimentation and maximize habitat value.
WQ8	Implement measures to reduce or eliminate dry weather nuisance flows.
Floo	d Protection (FP)
FP1	Assess flooding characteristics and hazards for each subwatershed, evaluate existing flood protection systems, and identify flood prone areas in need of improvement.
FP2	Protect and preserve natural flood plains.
FP3	Implement BMPs to manage stormwater runoff, sediment loads, and erosion in streams.
FP4	Manage modified streams and flood protection facilities to convey design flows and support ecosystem functions through the use of stream restoration and other environmentally sensitive means.
FP5	Incorporate recreation and community participation features into stormwater and flood protection projects.
Habi	tat Enhancement (HE)
HE1	Support protection and contribute to restoration of diverse habitats for threatened or endangered species, and establish management practices to restore dominance of locally relevant native species and reduce non-native or invasive species.
HE2	Support coordination or collaborative efforts to monitor threatened or endangered species populations and to monitor key indicators for assessing watershed health.
HE3	Protect and enhance buffers along riparian corridors including those along intermittent streams.
HE4	Protect and where appropriate, restore key corridors of wildlife movement.
Rec	reation (REC)
REC1	Promote expansion and connectivity of local and regional trail systems where compatible with the outlined resource goals and objectives.
REC2	Increase or improve interpretive features along accessible streams and wildlife habitat areas.
REC3	Support recreational opportunities in waterways that are compatible with water quality and water resource goals and objectives.
REC4	Support coordination or collaborative efforts with stakeholder groups to promote public education and community involvement in watershed management and restoration activities.
REC5	Support efforts to promote educational opportunities related to cultural and historic resources.
REC6	Promote research projects related to watershed resources.

2. EXISTING PROJECTS AND PROGRAMS

2.1 AGENCY PROJECT IDENTIFICATION MEETINGS

At the close of Phase 1, a preliminary assessment of existing issues with regard to each of the five resource areas was reported. In that assessment, some ongoing NBWA member agency projects and programs developed to address these issues were also identified. This information was primarily collected from several regional and agency specific planning documents and other written reports. The first step of Phase 2 was to complete this list of existing projects and programs through individual information collection meetings with each one of the fifteen NBWA member agencies. These meetings, called Project Identification Meetings, took place during the spring and summer of 2004. The purpose of these meetings was to identify each agency's projects and programs that were already in place to address the objectives of the North Bay Watershed. Each agency was asked to supply all projects including facility/infrastructure construction, programs, studies, outreach campaigns and any other efforts relating to water supply, water quality, flood protection, habitat enhancement and/or recreation in the following categories

- > Recently completed
- > Ongoing
- > Planned with funding
- > Proposed but without funding

Information collected from member agency representatives and documents was compiled into a basic spreadsheet database. From this database each of the member agencies were then re-contacted in an effort to fill in any remaining data gaps.

2.2 STAKEHOLDER PROJECTS AND PROGRAMS

During the summer of 2004, the NBWA Watershed Council was also included in the data collection pursuit. The Council was instrumental in directing WSP staff toward non-agency stakeholder projects and programs through existing databases such as the San Francisco Joint Venture web site and other resources. As previously mentioned, the NBWA Watershed Council includes representatives from State and Federal agencies as well as environmental, business, land owner and subwatershed groups. North Bay subwatershed group projects were also included into the WSP database from the KRIS (Klamath Resource Information System) database developed for eastern Marin and southern Sonoma counties as well as through individual contact and reporting of activities directly from these groups.

Nearly 300 projects and programs were identified through both the agency and stakeholder group data collection efforts. All of these projects are listed in a database spreadsheet format in Appendix A, on the CD attached to this Phase 2 Executive Summary. A detailed description of this database format and the data used within the spreadsheets is described in Section 3.



3. THE WSP GEOGRAPHIC INFORMATION SYSTEM DATABASE

3.1 THE GIS DATABASE FORMAT

Geographic Information Systems can be simply described as databases with geographic references that provide a visual representation of spatial relationships between the data contained within that database. The GIS database is basically a spreadsheet that is assigned a geographic feature such as a city (point feature), a river (line feature) or a county (polygon feature). These features are assigned a location through geographic reference information such as latitude/longitude information. GIS databases can create layers of point, line and polygon data that overlap the same geographical region to show the spatial relationships between these features as shown in Figure 3-1.

The functionality of a GIS database is enhanced by allowing the user to determine which database entries appear on a map based on selected criteria through what is known as "querying a database." For example, a database containing the population of all of the cities in Marin County could be queried for only those above 50,000 in population and only those cities meeting that criteria would be displayed on a map.

A GIS database can be easily updated but will always maintain the geographic reference, unless that is specifically updated as well. It is possible to view the database both geographically (as a map), as well as in its original spreadsheet format. A GIS can also be used for analysis of data, but these functions were not necessary for this stage of the WSP and as such, will not be described here.

3.2 **SELECTION OF THE GIS FORMAT FOR THE WSP**

The process of collecting watershed relevant project and program data should be an ongoing effort. As projects begin, change, and eventually end, an effective database should be updated to reflect these changes in order to maintain its relevance and usefulness. It is in the spirit of this concept, that the WSP database was converted into a GIS database. The GIS database format was selected because of its dynamic format which, if properly and regularly updated, can be continually used as a powerful resource and tool beyond completion of the initial WSP phases. In that sense, this Phase 2 report and all of the existing project data, gaps analysis and candidate projects described herein should be considered as a snapshot in time of an ongoing process.



PHASE 2 Executive Summary

The purpose of reporting this snapshot is to take a preliminary step toward developing and implementing new projects and programs through NBWA that can be useful in reaching the goals and objectives of the North Bay Watershed. As these NBWA candidate projects and programs, as well as those undertaken by individual agency and stakeholder groups, reach completion and are updated in the database, new projects and programs could be identified and added as well. Having a complete and accurate assessment of existing and completed efforts is essential toward determining where to effectively focus resources that will not result in a duplication of effort or an ineffective program.

The GIS database format was also selected because of its ability to provide a visual representation of the projects and programs included in the database. This was effective during the gaps analysis process by visually displaying geographical gaps with regard to each of the objectives outlined for the five resource areas of the WSP and will be explained further in Section 4: Gaps Analysis.

3.3 GUIDE TO THE WSP DATABASE STRUCTURE

Once it was decided to use a GIS database, the original spreadsheet database with all of the existing projects and program data was refined using GIS friendly and queriable codes providing project information for the attributes shown Appendix D on the attached CD. The attribute code table will aid in deciphering the attribute columns and data codes for each of the projects contained in the Existing Project and Program Database found in Appendix A. In order to maintain the queriable nature of the database, these code systems must be maintained during all updates. The files contained in Appendix A are a pdf version of the actual working spreadsheet linked to the GIS component.

All of the data shown under each of the attribute columns described in Appendix D were compiled from direct data sources (either through meetings or document research) except for those beginning with "OB" which refers to objective. After each of the projects were entered into the database, they were labeled as to which of the WSP objectives (as seen in Table 1-1) the project was contributing toward meeting. Each project was allowed to be listed for up to four out of the 28 possible objectives. For example, a recycled water project could meet both a water supply objective as well as a water quality objective. The "Area" attribute served as the basis for assigning polygon areas of impact for each of the projects. Again using the recycled water project as an example, the polygon drawn for that project would not necessarily include the site of the recycled water treatment facility itself, but rather the area that is using the recycled water.

3.4 QUERYING THE DATABASE

The main function of the database is its ability to display the results of any particular query. For the purposes of the Phase 2 WSP gaps analysis, the primary query used was based on the objective attribute. This specific process will be further described in Section 4: Gaps Analysis, but can be seen as an example in Figure 3-2. The process of querying is essentially asking to view all of the database entries that meet certain criteria based on one or more attributes by applying an equation. For example, OB = WS3, asks the database to show all projects that meet Water Supply Objective #3.

The GIS database can provide benefits beyond completion of Phase 2 WSP tasks. Since each of the projects also have data on several valuable attributes such as funding and subwatershed location, a user can easily query the database to display a map with, for example, all of the projects that still need funding in the Sonoma Creek subwatershed. This functionality of the WSP database makes it a powerful tool for assessing current activity in the watershed but also as a way to begin to assess the effectiveness/impacts of historical activities to the geography of the region.



3.5 UPDATING THE DATABASE

As previously mentioned, the value of the WSP database decreases the longer it is left idle. Currently, the entire GIS database (including all of the base map data files as well as the project database files) is being housed at RMC, Inc. - the consultant that developed the database and managed both Phase 1 and Phase 2 of the WSP. The last data updates were completed in October 2004. As such, there are some remaining existing projects and programs that were received later but were not able to be included in the gaps analysis completed for this Phase 2 report. These projects and programs have been attached as Appendix B. Effectively running and working with the WSP database for analysis, updates or any other function, requires the database to be housed on a computer system with both Microsoft Excel and ESRI ArcGIS (ArcView 8.3) software. Both of these programs are the industry leader within their class and should not be difficult to obtain, but will require an operator with experience in ESRI software.





4. GAPS ANALYSIS

4.1 THE GAPS ANALYSIS PROCESS

As mentioned above, the GIS database was primarily developed to aid in performing the gaps analysis necessary for the completion of Phase 2 of the WSP. Figure 4-1 describes what is meant by the gaps analysis with regard to the NBWA WSP process. As previously explained, each resource area goal was given several objectives to be met in order to reach that goal. One such objective to be met before the larger goal of water supply can be achieved is maximizing recycled water potential. Through the project identification process outlined in the previous section, it was determined that there are existing recycled water projects ongoing in the North Bay. These projects are a first step toward meeting the objective of maximizing recycled water production, but there is still more that can be done in other words, a gap. The gaps analysis conducted as part of Phase 2 weighs each objective against efforts already occurring towards meeting that goal to find where the gaps are and thus the needs of the watershed with respect to each of the resource areas.

4.2 COMPARISON WITH EXISTING CONDITIONS

The gaps analysis for the NBWA WSP was conducted using the existing project and program database in two ways. First, by comparing the database spreadsheet with the existing conditions/ issues spreadsheets developed and attached as Appendices to the Phase 1 Executive Summary. The issues and areas of concern discovered and reported in Phase 1 provide the obstacles to be faced in attaining the WSP objectives. By comparing the existing projects and programs database with the issues database, it was easily determined which specific issues will still need to be addressed through the development and implementation of new projects – or NBWA candidate projects.

4.3 **VISUAL GEOGRAPHIC OBJECTIVE ANALYSIS**

The second method used during gaps analysis employed the geographic representation of the existing projects and programs database. For each of the 28 WSP objectives, the database was queried to display existing projects or programs that were determined to be helpful in meeting that objective. The resulting maps from each of those queries are shown in the upper corner of each of the map pages displayed in Section 5: Candidate Projects. These existing project and program maps served as the basis for visually determining geographic areas within the NBWA region that did not have existing projects and programs already in place helping to meet the WSP objectives. These projects and programs were further categorized into completed, ongoing, or planned/proposed projects and programs. This further distinction was helpful in determining whether existing efforts could be expanded upon or whether an entirely new project or program would be necessary to help reach each objective for an area with a gap or watershed need.



5. CANDIDATE PROJECTS

5.1 CANDIDATE PROJECT DEVELOPMENT

Once the gaps analysis and watershed needs were determined for each of the 28 WSP objectives, candidate projects and programs were developed to meet those objectives. Many of the candidate projects developed were as a result of ideas given to WSP staff during the Project Identification Meetings described in Section 2. The candidate projects developed for the WSP also meet the following criteria:

- > Build upon but not duplicate existing efforts Projects could help in completing activities already started, but should not duplicate efforts that have already or are currently being completed by NBWA member agencies.
- Provide regional benefits Projects should provide benefits for the common objectives of the North Bay Watershed not only specific benefits to only one member agency.
- Create cost efficiencies Projects should provide the same or higher benefits to individual agencies without increasing the cost of performing the activities individually outside of NBWA.
- > Ability to implement Projects should be considered for feasibility of implementation through NBWA by not being excessive in either scope/budget nor politically objectionable/ controversial.

5.2 FORMAT OF CANDIDATE PROJECTS

It was not the purpose of Phase 2 to develop fully scoped projects for immediate implementation. Appendix C: Database of Candidate Projects includes basic project information for only three attributes including title, brief description/purpose, and estimated project budget. As a result, many of the 43 candidate projects are regional programs and not specific infrastructure based design or construction projects. These types of projects are often more efficiently developed by member agencies individually and do not benefit from nor provide benefits to a regional cost-sharing effort. This is not to say that each of the NBWA candidate projects is a fully regional effort that includes the entire North Bay Watershed. In fact, candidate projects are further grouped into three geographic categories:

- > **Regional**: includes the entire NBWA region
- Subwatershed: includes one or two individual subwatersheds
- Local: includes one or more specific smaller localized areas (such as river reaches)

While local projects and programs may not directly help to meet the objectives of the entire NBWA region they were developed as a necessary smaller step toward meeting the regional objective.

Each of the following pages is dedicated toward one of the 28 WSP objectives. Each page includes the following information presented in the same format:

> Description of objective

- Smaller map of existing projects and programs meeting that objective (Greater detail on the projects comprising the areas shown in the maps can be found in Appendix A: Database of Existing Agency and Stakeholder Projects and Programs.).
- Larger map showing the same existing project map overlaid with the candidate projects developed to fill the gap and meet that objective (Because several of the candidate projects meet multiple objectives, the same projects will appear on multiple maps.)
- > A numerical listing and title of candidate projects (A simple description and estimated cost for each of the candidate projects shown can be found in Appendix C: Database of Candidate Projects.).
- > A brief description of how the candidate projects shown help to fill the gaps and meet the objective



WS1: Provide sustainable potable water supply to meet the long-term needs of the watershed's residents, local industry, and agriculture, while protecting natural resources.

CANDIDATE

- **Regional Support for** 0 Member Agency Water Supply Implementation Projects
 - North Bay Regional Water Supply Master Plan

Balancing the North Bay's many water demands can be challenging. With a growing population, continuing to provide a reliable water supply for residential, industrial, and agricultural demands while maintaining adequate water levels for natural habitats will require regional cooperation and innovative programs. While much is



currently being done, NBWA could be instrumental in facilitating this process by providing regional support for the implementation of individual member agency water supply projects including MMWD's Desalination Pilot Program and the recycled water initiatives ongoing in the Sonoma and Napa valleys. NBWA could also take the lead on developing a Regional Water Supply Master Plan that would define strategies for water supply reliability and capital improvement programs.

RMC

EXISTING PROJECTS

EXISTING PROJECTS



WS2: Establish groundwater management practices to avoid overdrafts and ensure a long-lasting, beneficial use of groundwater resources.



PROJECTS

North Bay Integrated Groundwater Management Plan

While the Marin County has typically not relied on groundwater due to a lack of suitable aquifers, the Sonoma and Petaluma subwatershed areas are currently engaged in studies to determine the impacts of ground water pumping on a basin level. NBWA would be well suited to coordinate and expand on these efforts to produce an Integrated Groundwater Management Plan for the North Bay. This plan could also serve to examine the feasibility of aquifer storage and recovery (ASR) programs in the region.

WS3: Maximize the use of recycled water to offset potable and non-potable water needs.

0

3

Water Supply

Water Supply Master Plan

Strategies

have a long history of

Projects



in the North Bay. As such, there are currently many ongoing and planned recycled water projects in the region. While these existing programs are a first step, supporting proposed efforts such as the Napa Sonoma Salt Marsh Restoration Project, which uses recycled water for innovative habitat restoration is important. NBWA can also serve to coordinate regional recycling efforts that will help maximize recycled water potential as well as provide a forum for recycled water collaboration on a regional level.

RMC

EXISTING PROJECTS