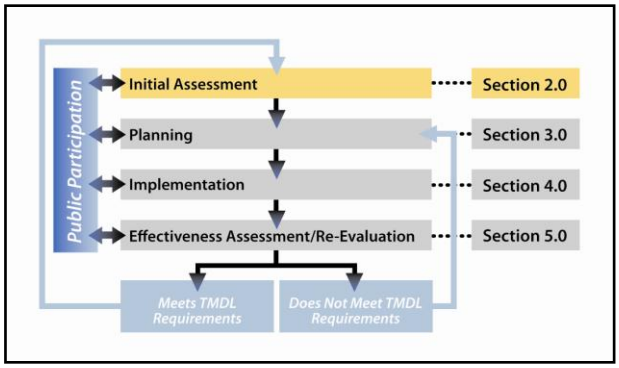
2.0 INITIAL ASSESSMENT



The Initial Assessment component of the Integrated TMDL Watershed Approach is based on a holistic approach that considers chemical, physical, and biological processes that potentially impact designated beneficial uses in the Chollas Creek Watershed. Existing water quality, water quality ratings, pollutant sources, and other relevant watershed data were collected, compiled, assessed, and then used to identify and prioritize water quality problems, sources of pollutant loading, and subwatersheds. The assessment process results are presented in Table 2-2 and Figure 2-1 (also included in Tool A of Appendix D). These documents helped Dischargers prioritize watershed activities for Phase I implementation and will be used for future phases. Dischargers may modify these prioritization tools based on the assessment findings of Phase I prior to planning subsequent implementation phases.

2.1 Outcomes of the Initial Assessment

The Dischargers first developed a list of the priority water quality problems for the Chollas Creek Watershed to prioritize pollutant sources and geographic areas within the Chollas Creek Watershed, presented in Table 2-1. This list helped Dischargers in the selection and location of watershed activities. This Initial Assessment also helped Dischargers identify data gaps and formulate a list of potential special studies (see Table 5-2 in Section 5.0).

Table 2-1. Priority Water Quality Problems for the Receiving Waters of the Chollas Creek Watershed [1]

Relative Priority	Metals	Bacteria	Pesticides	Other
Section 303(d) Pollutants[2]	Dissolved copper, dissolved zinc, and dissolved lead	Indicator bacteria (total coliform, fecal coliform, and enterococci)	Diazinon	
Other Pollutants	Total copper[3], total zinc[3], and total lead[3]	–	Chlorpyrifos[3]	Trash[4] Sediment[3] Turbidity[3] Toxicity[3]

[1] This table derived from the *Chollas Creek TMDL Source Loading Assessment, BMP Evaluation, and Recommended Monitoring Strategy Report* (WESTON, 2006).
[2]Dischargers considered these priority water quality problems in the development and selection of watershed activities that address multiple pollutants in addition to reducing dissolved metals loadings.
[3]Dischargers may consider these water quality problems and/or others when considering the type of watershed activities to implement.
[4]The City of San Diego is the only Discharger subject to an enforcement order for trash.

Using the list of Priority Water Quality Problems (Table 2-1), the Dischargers then developed a prioritized list of pollutant sources for each priority water quality problem. The Priority Sources

of Pollutants Table (Table 2-2 or Table A-6 in Tool A of Appendix D) identifies the 12 most common sources of priority water quality problems based on a desktop analysis of the Baseline Long-Term Effectiveness Assessment (BLTEA) Inventory of Sources (WESTON, MOE, and LWA, 2005). When used in combination with Table A-7 (Priority Sources Applicable to Each Discharger), Dischargers were able to prioritize the sources of pollutants within their jurisdiction to aid in selecting watershed activities.

Table 2-2. Priority Sources of Pollutants [1]

Sources of Pollutants		Source Priority	Pollutants
Discharger's facilities [2]		**M**	Metals, bacteria, sediment, nutrients, and pesticides
Roads, streets, highways, parking facilities, and vehicular storage areas		**H**	Metals, bacteria, and sediment
Marinas and boat repair, fueling, and maintenance		**H**	Metals and bacteria
Industrial facilities [3]		**H**	Metals
Commercial auto-related facilities [4]		**H**	Metals and sediment
Residential activities	Home auto care activities	**H**	Metals
	Dog waste, trash, and landscaping waste management		Bacteria and over-irrigation [5]
	Landscaping and construction activities		Sediment
	Pesticide management		Pesticides
Eating and drinking establishments		**M**	Bacteria
Animal-related facilities		**M**	Bacteria, nutrients, sediment, and pesticides
Golf courses, parks, and recreational facilities		**M**	Bacteria, nutrients, sediment, pesticides, and over-Irrigation [5]
Commercial landscaping		**L**	Bacteria, nutrients, sediment, pesticides, and over-Irrigation [5]
Commercial pest control – pesticide management		**L**	Pesticides
Construction – contractors for home and commercial improvements		**H**	Sediment

[1] This table derived from the City of San Diego's *Strategic Plan for Watershed Activity Implementation* (WESTON, 2007).
[2] Sites for disposing and treating sewage sludge, landfills, water and wastewater treatment facilities, corporate maintenance and storage yards, and MS4s.
[3] Motor freight, fabricated metal, primary metal, and chemical and allied products.
[4] Auto mechanical repair, maintenance, fueling or cleaning; equipment mechanical repair, maintenance, fueling and cleaning; automobile and other vehicle body repair and painting; mobile automobile or vehicle washing; and retail and wholesale fueling.
[5] Over irrigation has been included as a transport mechanism for pollutants.
H – Highest priority.
M – Medium priority or next highest priority.
L – Lower priority.

Using historical monitoring data of the list of Priority Water Quality Problems, the Dischargers also developed the Priority Sector map indicating the geographic areas within the watershed with the highest pollutant loading potential (Figure 2-1). Priority sectors identify regions where higher priority water quality problems and higher priority sources overlap with areas of high dissolved metals pollutant loading and/or targeted land uses. The Sector Map was created for watershed-level analysis so early watershed activities could target areas believed to have the greatest pollutant loading.

Implementing Phase I watershed activities in higher priority sectors uses available resources more cost effectively by addressing higher pollutant loading areas in this initial phase. As effectiveness assessments identify the most efficient and cost-effective watershed activities, BMPs may be implemented in other sectors.

The different sectors have the following characteristics:

- Sector 1 encompasses the mouth of Chollas Creek and the immediate drainage area to the Section 303(d) Listed Water Quality Limited waters. Types of watershed activities that may be implemented in this high priority sector include source controls, behavioral changes, LID, and infrastructure-intensive treatment activities.
- Sector 2 runs along the northern boundary of the Chollas Creek Watershed. Sector 2 includes subdrainage areas with high-priority metals loadings due to a larger commercial corridor and extensive roads and highways. These portions of Sector 2 will be targeted by the City of San Diego for an aggressive street sweeping program. Types of watershed activities that may be implemented in this high priority sector include source controls, behavioral changes, LID, and infrastructure-intensive treatment activities.
- Sector 3 runs through the center of the Chollas Creek Watershed and has many of the same characteristics as Sector 2. The main difference is that this area has a relatively high density of industrial land uses rather than commercial land uses. A similar suite of programs may be implemented in this high priority sector, but with adjustments made for these different sources.
- The upper reaches of the watershed have been designated lower-priority Sector 4 and Sector 5. The headwaters have a lower priority because pollutants have more opportunities for treatment and removal and because of fewer concentrated industrial sources of priority pollutants. Types of watershed activities that may be implemented in these high priority sectors include source controls, behavioral changes, and LID. Infrastructure-intensive treatment activities may be possible but will be dependent on the measured pollutant reductions achieved and available resources.

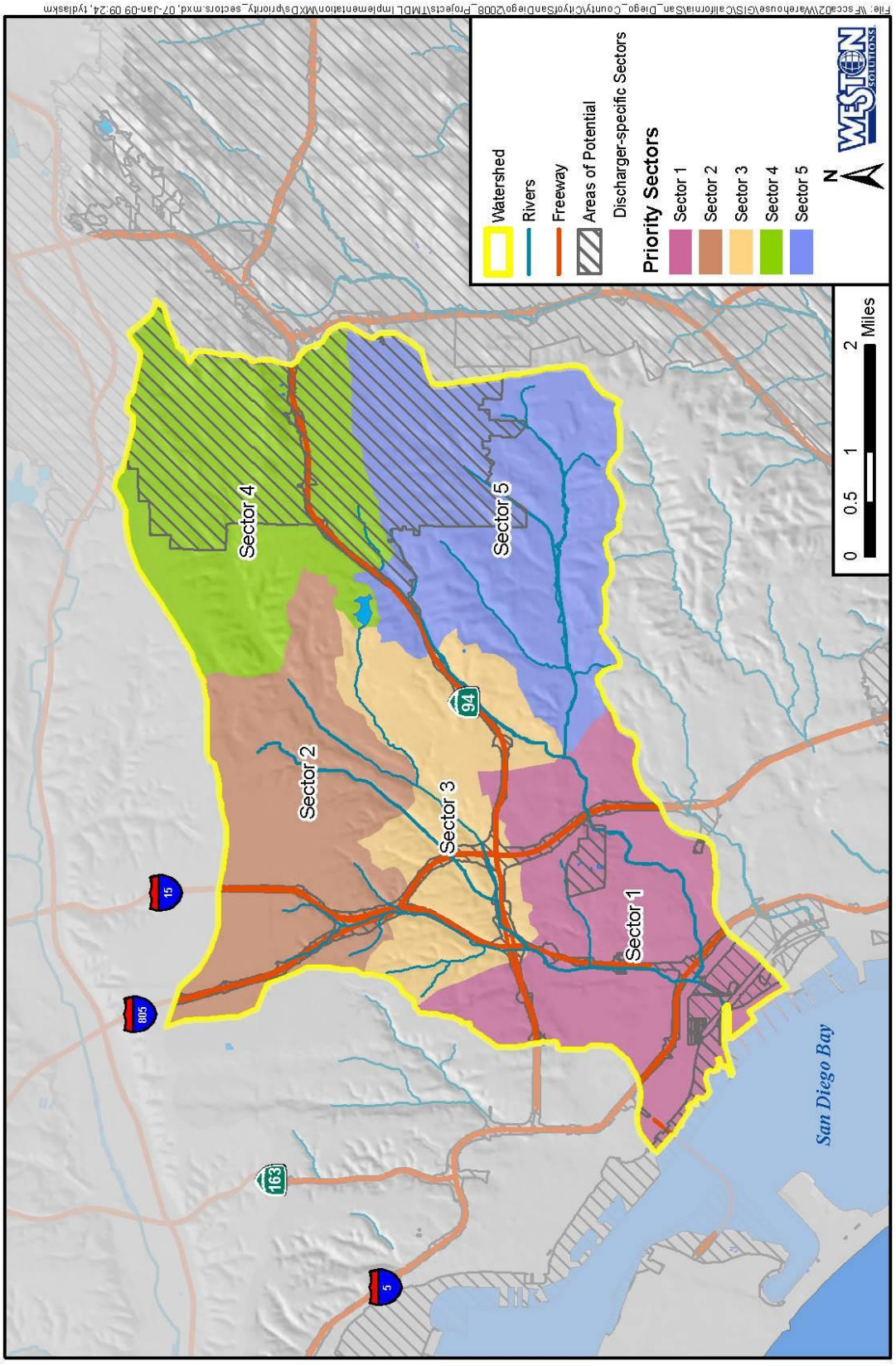


Figure 2-1. Priority Sector Map

2.2 Key Findings from the Review of Existing Water Quality Data

In brief, the key findings related to water quality in the Chollas Creek Watershed identified during this Assessment process include the following:

- The historical mean data from 1994 to 2008 indicated concentrations exceeding water quality benchmarks for dissolved copper, indicator bacteria, Diazinon, total suspended solids, turbidity, Chlorpyrifos, and toxicity to *Hyalella azteca*.
- The first storm of the season, or first-flush storm event, has significantly higher pollutant concentrations for all metals, total hardness, and nutrients.
- Aerial deposition of roadway dust, industrial emission, and air conditioner condensate may contribute a significant portion of the total copper load in the Chollas Creek Watershed.
- The concentration of Diazinon (and Chlorpyrifos) has been decreasing with time. Diazinon is encountered less frequently, and measured concentrations are generally below the WLA of the Diazinon TMDL.
- Creek restoration is likely to decrease loadings of total suspended solids and associated pollutants (e.g., metals and pesticides) once vegetation becomes established and matures.

The water quality analysis and existing water quality reports from which these key findings were drawn are presented in the compilation of historical data presented in Appendix A.

2.3 Key Findings from the Review of Pollutant Source Data

In brief, the key findings regarding the sources of priority water quality problems in the Chollas Creek Watershed identified during this Assessment process include the following:

- Potential sources of metals are generally clustered along commercial secondary streets. These clusters correspond with many of the subwatersheds characterized as high for relative annual metals loadings.
- Based on the normalized per acre loading for dissolved copper, lead, and zinc, the upper northwestern drainage area to the north fork (Sector 2), the middle of the north fork (Sector 3), and the lower portion of the watershed are characterized by the highest loading (Sector 1).
- Total coliform, fecal coliform, and enterococci occur throughout the watershed, but sources of bacteria appear to be located in the upper reaches of both the north and south forks of Chollas Creek and near the base of the watershed. These locations are also relatively high loading areas for Diazinon.

Additional maps and analyses regarding the pollutant source data and the BLTEA Inventory of Sources are presented in Tool A of Appendix D.