

# Section 1

## Introduction

The Ira Township Source Water Protection Program has been developed in accordance with the Michigan Department of Environmental Quality's (MDEQ) Water Bureau guidance dated August 5, 2004. This Source Water Protection (SWP) program contains the following seven elements:

- Definition of roles and duties of government units and water supply agencies
- Delineation of a source water protection area for the Anchor Bay Intake water supply source based on the US Geological Survey/MDEQ defined source water area<sup>1</sup>
- Identification of potential contaminant sources within each source water protection area
- Management approaches for protection of source water, including education and regulatory approaches
- Contingency plans for public water supply sources including the location of alternate drinking water sources
- Siting procedures for new water sources to minimize potential contamination
- Public participation

### 1.1 Community Location

Ira Township is located in the southwest corner of St. Clair County, Michigan. Ira is bordered by the City of New Baltimore to the west, Clay and Cottrellville Townships to the east, Casco Township to the north, and Anchor Bay of Lake St. Clair to the south as shown in Figure 1-1. The township covers an area of approximately 10,932 acres.

### 1.2 Existing Facilities

The water system in Ira Township has been operating since 1929, when a water works special assessment district was formed. The system originally consisted of a water intake in Anchor Bay, a pump house on the shore, and a 75,000 gallon elevated storage tank. Water pipelines along highway M-29 were also installed.

In 1941, a water filtration plant was built to serve the M-29 corridor and the southern portion of the township. After a period of time, the western portion of the township was served by the City of New Baltimore. The service to this area was terminated by New Baltimore in 1996 when the Ira Township system was expanded.

The Township Board authorized the preparation of an engineering plan in 1994 for a new water intake, treatment plant, elevated water storage tank, and distribution system improvements. The 1994 engineering plan, Summary Document - Ira Township Water Treatment Plant Preliminary Design, included a discussion of the design of a new water treatment plant, modeling of the distribution system, and recommended improvements to the system. A new water treatment plant was financed through the county, and the new facilities were operating by September 1996. Only a portion of the distribution system upgrades recommended in the report were completed at that time.

The current water intake and treatment system, as shown on Figure 1-2, consists of the following components:

- Intake: Crib-style intake in Lake St. Clair with screens
- Shorewell: Inlet water screening equipment, activated carbon feed equipment, chlorination for mussel control, vertical turbine pumps
- Treatment facility: Package two-stage filtration, with upflow solids contact clarifier and mixed media filter. Other facilities consist of a gas chlorine disinfection system, vertical turbine high service and backwash pumps, laboratory and office facilities.
- Elevated Storage: 400,000 gallon elevated storage tank

The treatment facility was designed to treat 2.25 mgd (projected 20 year water demand), with the ability to upgrade to 3.0 mgd by replacing current pumps with larger units. The intake was designed for a maximum capacity of 5 mgd. The current system has excess capacity and water can be provided to other townships. Expansion to 3.0 mgd may require more storage due to current C.T. standards.

The water distribution system for Ira Township consists of pipe ranging in diameter from 4 to 16 inches. The oldest pipe in the system was installed in the 1920's. The distribution system was expanded in the 1940s when the original water treatment facilities were built. The 1940s installations included most of the water main branching off the original water main along Lake St. Clair. The township has added to the distribution system over time. Most recently, the water mains along Short Cut Road were upgraded to 16-inch diameter to serve as the primary distribution mains in the system.

### **1.3 Community Population**

Ira Township's past and projected population is summarized in Table 1-1, primarily from information on the Southeast Michigan Council of Governments (SEMCOG) website<sup>2</sup>.

The Ira Township Water Treatment Plant Preliminary Design projected a population growth rate of about 3 percent per year for the period from 2014 to 2034. Total increase in population from 1994 to 2034 was projected to be a total of 33.8% growth rate for Ira Township and 42.5% for the entire water service area.

**Table 1-1: Ira Township Population - Past, Current, and Projected**

| Year         | Population | Households |
|--------------|------------|------------|
| 1950         | 1,675      | --         |
| 1960         | 2,746      | --         |
| 1970         | 3,612      | --         |
| 1980         | 4,316      | --         |
| 1990         | 5,587      | 2,143      |
| 2000         | 6,966      | 2,677      |
| 2004 (Sept.) | 7,182      | 2,754      |
| 2010         | 7,473      | --         |
| 2030         | 9,430      | 3,719      |

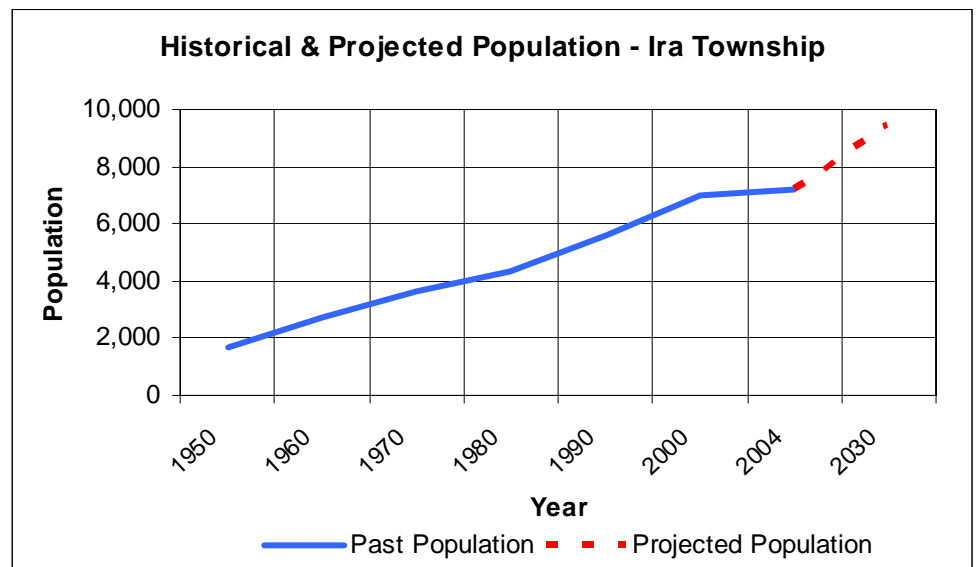


Figure 1-3 Historical and Projected Population - Ira Township

SEMCOG is the area-wide Water Quality Planning Agency for Southeast Michigan under the Federal Clean Water Act (PL 92-500). The estimated population served by the water system is:

- 3,291 residential equivalent units (REUs) x 2.6 (household population per REU) = 8,556 total customers (includes commercial and industrial sales)
- This total also includes water sales to Cottreville Township and New Baltimore, estimated as 52 REUs x 2.6 (household population per REU) = 135 customers.

## 1.4 Land Use

Land use in the township in 1993, according to the Ira Township Master Plan (1998) was only 17% developed. Of the developed area, 52.5% was either single-family residential or mobile home parks.

The primary growth in the township is west from Chesterfield Township along the Lake St. Clair shoreline towards Cottreville Township. Chesterfield Township experienced a high growth rate during the 1990's and has affected growth in Ira Township. However, the southern part of Ira Township along M-29 has had commercial and residential development since the village of Fair Haven was established.

Along the M-29 (Dixie Highway) corridor between the Bethuy Road intersection and Stier Road, the primary land use is commercial and residential. New construction is mainly "fill-in" development of remaining property, with little open property remaining along the Lake St. Clair shore. See Figure 1-4. Areas directly north of M-29 are primarily agricultural and residential.

## 1.5 SWP Program Goals

The township has developed this surface water protection program to enhance the security and safety of its customers. The goals of the program are to:

- Increase public and government awareness of the need for reliable early warning detection and notification systems to protect surface water intakes along the St. Clair River/Lake St. Clair/Detroit River corridor
- Define roles and responsibilities for government, public safety, public works, and water department personnel relative to source water issues
- Define areas that pose potential risk to the surface water intake and identify potential sources of contamination within that area
- Manage source water protection through regulation and public information as necessary to enhance public awareness

- Create contingency plans in the event of intake contamination
- Create a framework to consider new intake siting relative to potential contamination concerns

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<sup>1</sup> U.S. Geological Survey, Water Resources Division, Michigan District  
Michigan Department of Environmental Quality, Water Division , “Source Water  
Assessment Report for the Ira Township Water Supply”, December 2003, Ira Township  
Water Supply: WSSN 3390 -- Michigan Source Water Assessment Report 38

<sup>2</sup> Southeast Michigan Council of Governments – [www.semco.org](http://www.semco.org)