

SECTION 6

ULTIMATE SEWER SYSTEM

6-1 General Description

The ultimate sewer collection system will include service to New Model Colony as shown on Figure 6-1. Approximately 140,000 feet of additional trunk sewer will be added to the City's system in New Model Colony. The New Model Colony trunk sewers are planned to range in size from 12-inches to 36-inches as shown on Figure 6-2.

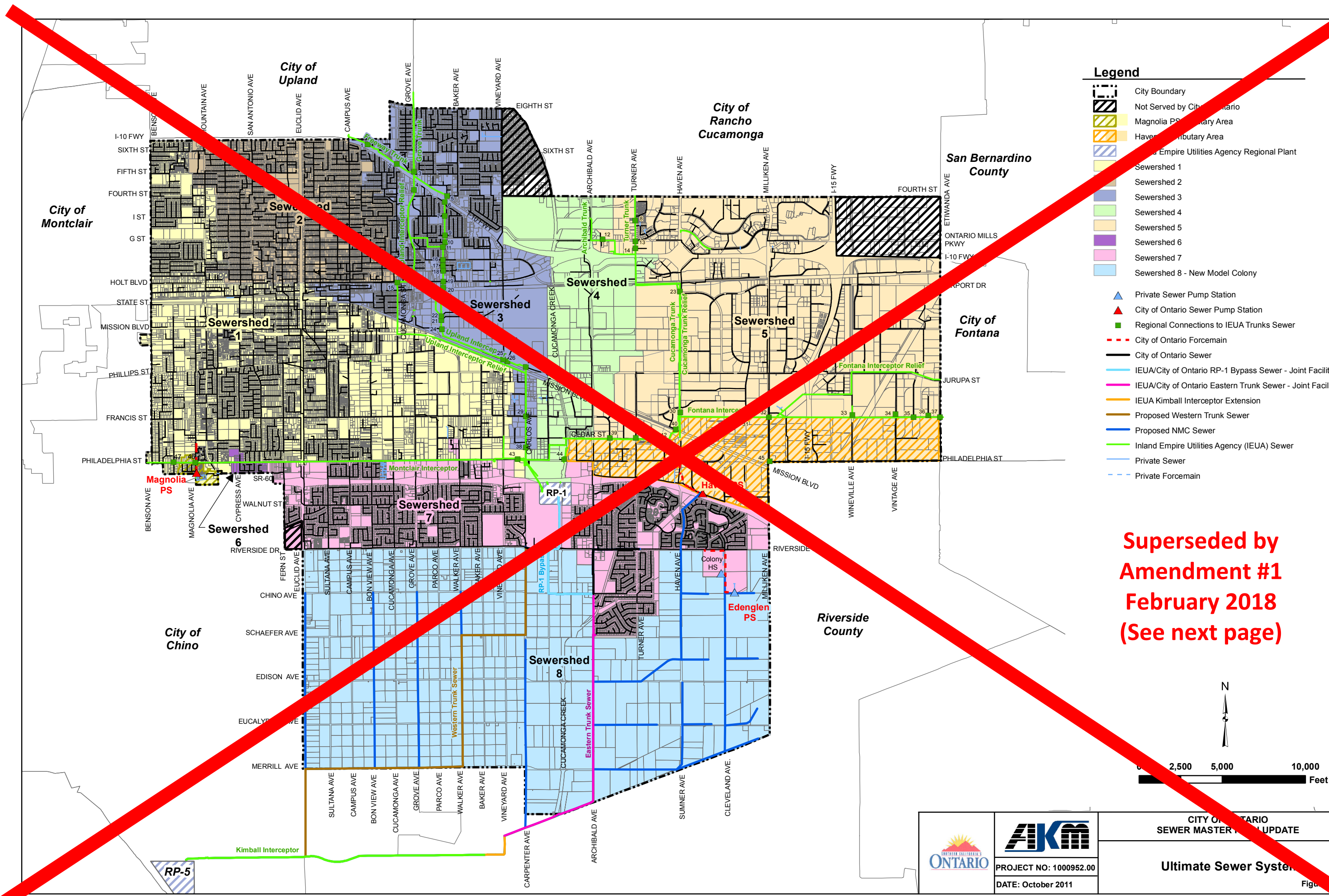
In New Model Colony, the Western Trunk Sewer is the primary sewer located west of Cucamonga Creek. It starts at the intersection of Whispering Lakes Drive/Carpenter Avenue and Riverside Drive, where it will intercept all of the Old Model Colony flows generated north of Riverside Drive and west of Whispering Lakes Drive that were originally tributary to the decommissioned Whispering Lakes Pump Station. The Western Trunk Sewer will then extend south to Schaefer Avenue (18-inch/21-inch), west to Walker Avenue (30-inch), south to Merrill Avenue (30-inch), west to Euclid Avenue (30-inch/36-inch), and south to Kimball Avenue (36-inch) where it ties into the existing IEUA Kimball Interceptor (54-inch/60-inch). The Western Trunk Sewer is currently sized to accommodate only City generated flows.

6-2 Existing and Projected Sewage Generation

The total existing average sewer load for Old Model Colony is estimated at 18.75 mgd. This estimate is based upon the calibrated unit flow factors shown in Table 4-2, which were developed through flow monitoring conducted in 2006. The calibrated unit flow factors were based on the existing users and vacancies at that time.

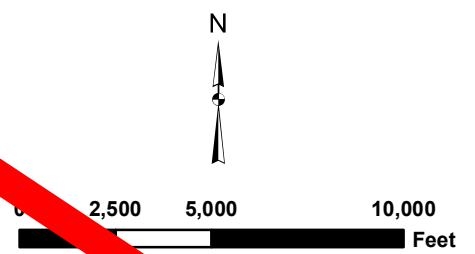
The ultimate average sewage generation for Old Model Colony and New Model Colony is estimated at 45.03 mgd. This estimate is based upon the ultimate unit flow factors shown in Table 4-3. The increase in ultimate flow is due to development of New Model Colony anticipated densification in land use and population per the City's 2010 General Plan and the assumption that the area will be fully occupied. Water conservation efforts were not included in the ultimate average sewage generation estimate. For planning purposes, it is believed to be better not to include water conservation efforts that are not definitive. This will prevent the undersizing of gravity sewers and pump stations.

A summary of the projected sewage generation by landuse is shown in Table 6-1. Airport sewage loads were generated based upon 90 percent of the average water use as shown in Table 6-2.

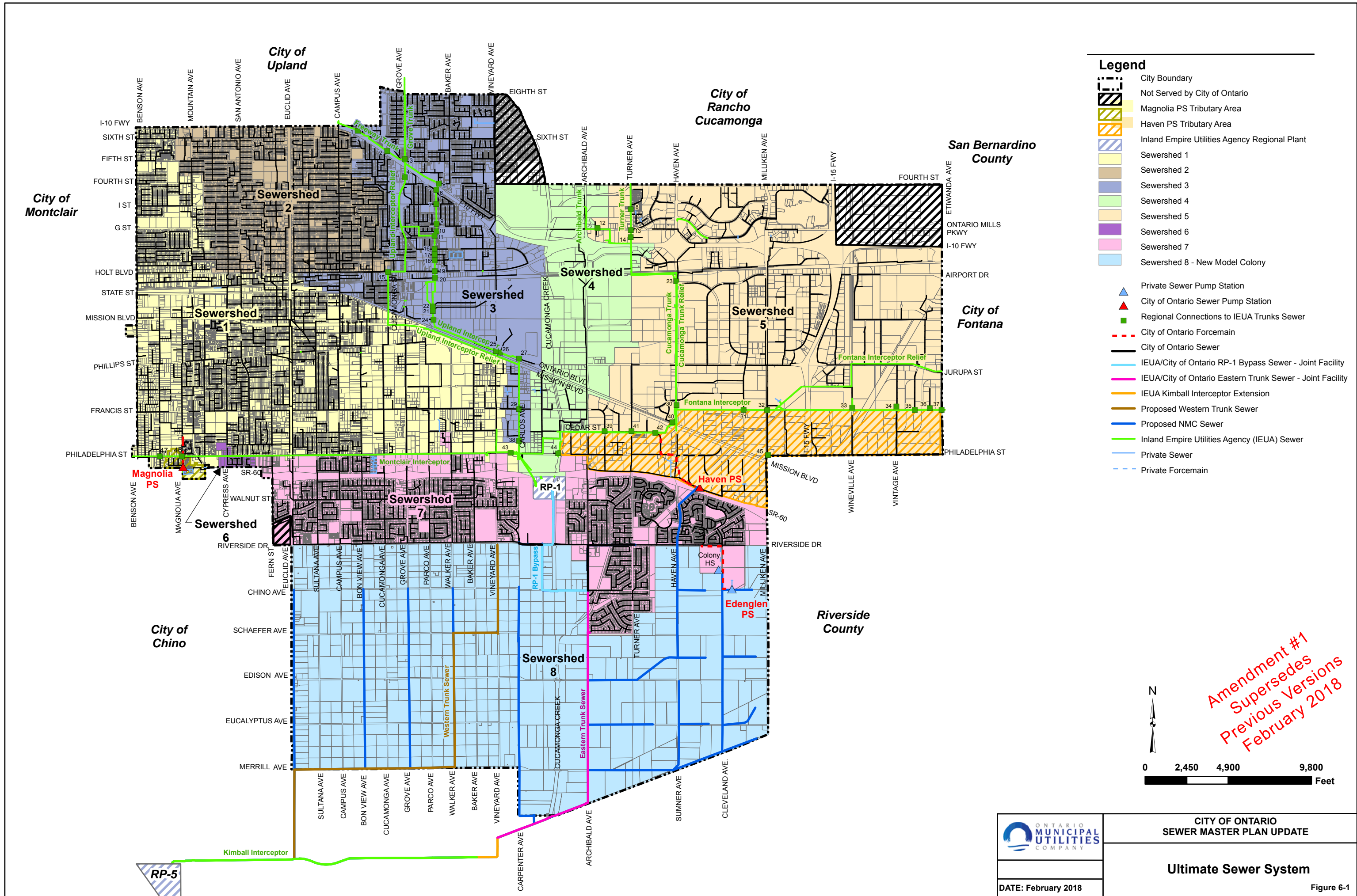


- Legend**
- City Boundary
 - Not Served by City of Ontario
 - Magnolia PS Tributary Area
 - Haven Tributary Area
 - Inland Empire Utilities Agency Regional Plant
 - Sewershed 1
 - Sewershed 2
 - Sewershed 3
 - Sewershed 4
 - Sewershed 5
 - Sewershed 6
 - Sewershed 7
 - Sewershed 8 - New Model Colony
 - Private Sewer Pump Station
 - City of Ontario Sewer Pump Station
 - Regional Connections to IEUA Trunks Sewer
 - City of Ontario Forcemain
 - City of Ontario Sewer
 - IEUA/City of Ontario RP-1 Bypass Sewer - Joint Facility
 - IEUA/City of Ontario Eastern Trunk Sewer - Joint Facility
 - IEUA Kimball Interceptor Extension
 - Proposed Western Trunk Sewer
 - Proposed NMC Sewer
 - Inland Empire Utilities Agency (IEUA) Sewer
 - Private Sewer
 - Private Forcemain

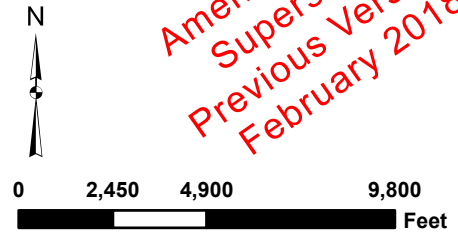
**Superseded by
Amendment #1
February 2018
(See next page)**



| | | |
|--|--|---|
| | | CITY OF ONTARIO SEWER MASTER PLAN UPDATE |
| | PROJECT NO: 1000952.00 DATE: October 2011 | Ultimate Sewer System Figure |



- Legend**
- City Boundary
 - Not Served by City of Ontario
 - Magnolia PS Tributary Area
 - Haven PS Tributary Area
 - Inland Empire Utilities Agency Regional Plant
 - Sewershed 1
 - Sewershed 2
 - Sewershed 3
 - Sewershed 4
 - Sewershed 5
 - Sewershed 6
 - Sewershed 7
 - Sewershed 8 - New Model Colony
 - Private Sewer Pump Station
 - City of Ontario Sewer Pump Station
 - Regional Connections to IEUA Trunks Sewer
 - City of Ontario Forcemain
 - City of Ontario Sewer
 - IEUA/City of Ontario RP-1 Bypass Sewer - Joint Facility
 - IEUA/City of Ontario Eastern Trunk Sewer - Joint Facility
 - IEUA Kimball Interceptor Extension
 - Proposed Western Trunk Sewer
 - Proposed NMC Sewer
 - Inland Empire Utilities Agency (IEUA) Sewer
 - Private Sewer
 - Private Forcemain



Amendment #1
 Supersedes
 Previous Versions
 February 2018

| | |
|---------------------|---|
| | CITY OF ONTARIO SEWER MASTER PLAN UPDATE |
| | Ultimate Sewer System |
| DATE: February 2018 | Figure 6-1 |

Riverside County

City of Chino

Legend

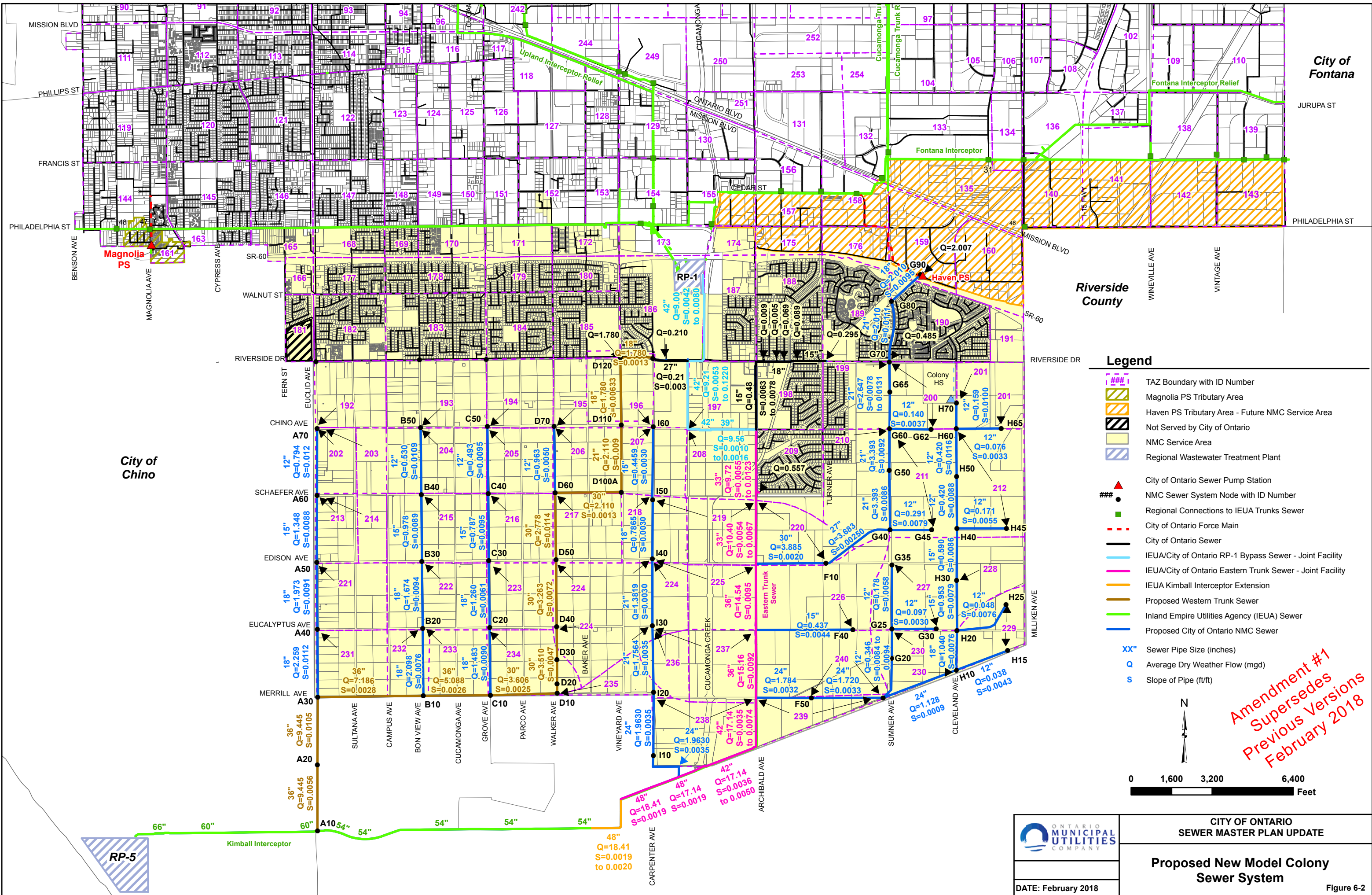
- TAZ Boundary with ID Number
- Magnolia PS Tributary Area
- Haven PS Tributary Area - Future NMC Service Area
- Not Served by City of Ontario
- NMC Service Area
- Regional Wastewater Treatment Plant
- City of Ontario Sewer Pump Station
- NMC Sewer System Node with ID Number
- Regional Connections to IEUA Trunks Sewer
- City of Ontario Force Main
- City of Ontario Sewer
- IEUA/City of Ontario RP-1 Bypass Sewer - Joint Facility
- IEUA/City of Ontario Eastern Trunk Sewer - Joint Facility
- IEUA Kimball Interceptor Extension
- Proposed Western Trunk Sewer
- Inland Empire Utilities Agency (IEUA) Sewer
- Prop Sew
- Ave
- Slope

Superseded by Amendment #1 February 2018 (See next page)



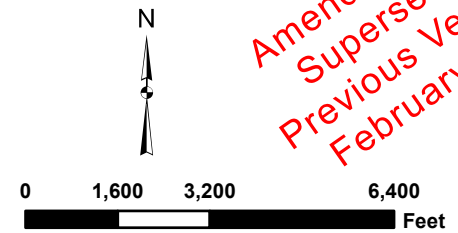
AKM
 PROJECT NO: 1000952.00
 DATE: April 2012

CITY OF ONTARIO
 SEWER MASTER PLAN UPDATE
Proposed New Model Colony Sewer System



- ### Legend
- ### TAZ Boundary with ID Number
 - Magnolia PS Tributary Area
 - Haven PS Tributary Area - Future NMC Service Area
 - Not Served by City of Ontario
 - NMC Service Area
 - Regional Wastewater Treatment Plant
 - ▲ City of Ontario Sewer Pump Station
 - NMC Sewer System Node with ID Number
 - Regional Connections to IEUA Trunks Sewer
 - City of Ontario Force Main
 - City of Ontario Sewer
 - IEUA/City of Ontario RP-1 Bypass Sewer - Joint Facility
 - IEUA/City of Ontario Eastern Trunk Sewer - Joint Facility
 - IEUA Kimball Interceptor Extension
 - Proposed Western Trunk Sewer
 - Inland Empire Utilities Agency (IEUA) Sewer
 - Proposed City of Ontario NMC Sewer
 - XX" Sewer Pipe Size (inches)
 - Q Average Dry Weather Flow (mgd)
 - S Slope of Pipe (ft/ft)

Amendment #1
Supersedes
Previous Versions
February 2018



ONTARIO MUNICIPAL UTILITIES COMPANY

CITY OF ONTARIO
SEWER MASTER PLAN UPDATE

**Proposed New Model Colony
Sewer System**

DATE: February 2018

Figure 6-2

**Table 6-1
City of Ontario
Ultimate Sewage Generation**

| Land Use Type | OMC Sewer Loads (gpd) | NMC Sewer Loads (gpd) | Sewer Loads due to High Water Users (gpd) | Total (gpd) | Total (mgd) |
|--------------------------------|------------------------------|------------------------------|--|--------------------|--------------------|
| Rural Residential | 226,497 | 0 | 0 | 226,497 | 0.23 |
| Low Density Residential | 4,022,533 | 3,486,222 | 35,039 | 7,543,793 | 7.54 |
| Low-Medium Density Residential | 546,270 | 1,030,784 | 108,882 | 1,685,936 | 1.69 |
| Medium Density Residential | 3,100,730 | 5,082,309 | 250,186 | 8,433,225 | 8.43 |
| High Density Residential | 1,516,007 | 0 | 0 | 1,516,007 | 1.52 |
| General Commercial | 354,181 | 133,876 | 15,364 | 503,422 | 0.50 |
| Business Park | 718,599 | 936,539 | 3,155 | 1,658,293 | 1.66 |
| Hospitality | 631,304 | 0 | 0 | 631,304 | 0.63 |
| Neighborhood Commercial | 214,663 | 139,885 | 31,247 | 385,795 | 0.39 |
| Office Commercial | 1,178,265 | 367,181 | 0 | 1,545,446 | 1.55 |
| Industrial | 10,205,821 | 450,619 | 1,125,948 | 11,782,388 | 11.78 |
| Public Facility | 144,223 | 3,725 | 0 | 147,948 | 0.15 |
| Public School | 565,600 | | 0 | 565,600 | 0.57 |
| Airport | 507,053 | | 0 | 507,053 | 0.51 |
| Mixed Use | 4,971,008 | 1,791,707 | 2,298 | 6,765,013 | 6.77 |
| Open Space - Non-Recreational | 137,649 | 101,268 | 0 | 238,918 | 0.24 |
| Open Space - Recreational | 105,621 | 92,647 | 691,819 | 890,087 | 0.89 |
| Total | 29,146,027 | 13,616,761 | 2,263,937 | 45,026,724 | 45.03 |

**Table 6-2
Ontario International Airport Sewage Load Estimates**

| Name | Address | Water Use (gpd) | Sewer Load (gpd) | Model | Model ID | Total Sewer Load Applied to Model ID (gpd) |
|----------------------|---------------------|-----------------|------------------|--|----------|--|
| L A W A | 1090 S Vineyard Ave | 2,330 | 2,097 | West | L17102 | 4,663 |
| Guardian Air Service | 1150 S Vineyard Ave | 2,851 | 2,566 | | | |
| City Of L.A. Ontario | 1152 S Vineyard Ave | - | - | | | |
| Federal Express | 1801 E Avion St | 3,847 | 3,462 | West | L17100 | 17,182 |
| Lsg/Sky Chefs | 1902 E Avion St | 6,261 | 5,635 | | | |
| L A Dpt Apts | 1903 E Avion St | 49 | 44 | | | |
| Lsg Sky-Chefs | 1904 E Avion St | 1,892 | 1,703 | | | |
| L A Dpt Apts | 1923 E Avion St | 7,042 | 6,338 | | | |
| Mercury Air Group | 2161 E Avion St | 2,793 | 2,514 | West | M18102 | 2,514 |
| General Electric | 2264 E Avion St | - | - | | | |
| U S Post Office | 2300 E Airport Dr | 204,958 | 184,462 | East | K19101 | 383,801 |
| L A Dpt Apts | 2900 E Airport Dr | 221,488 | 199,339 | | | |
| L A Dpt Apts | 3102 E Airport Dr | 6,726 | 6,053 | Sewage flow directly tributary to IEUA | | |
| L A Dpt Apts | 3200 E Airport Dr | 22,009 | 19,808 | | | |
| L A Dpt Apts | 3450 E Airport Dr | 81,146 | 73,031 | | | |
| | | Total | 507,053 | | | |

6-3 Cooperative Agreement between City of Ontario and IEUA

A cooperative agreement between Inland Empire Utilities Agency (IEUA) and the City of Ontario for the sewer conveyance facilities of the Eastern Trunk Sewer, Kimball Interceptor Sewer Extension, and RP-1 Outfall (i.e. Conveyances) was made effective on October 7, 2003. Amendment No. 1 to this agreement was made June 4, 2004. The initial agreement established that the facilities be owned jointly between the agencies and that the share of ownership be based on average daily wastewater flows. The average daily wastewater flow capacity in each segment of the Conveyances was revised in Amendment No. 1 and is summarized in Table 6-3. Copies of the cooperative agreement and its amendment are provided in Appendix E.

IEUA and the City agreed to temporarily divert the Whispering Lakes Pump Station flow into the Conveyances. Amendment No. 1 temporarily reallocated capacity of up to 3 mgd to the City of Ontario, to facilitate the diversion without building excess capacity. Therefore, IEUA's original average daily flow capacity of 9 mgd was reduced to 6 mgd in any reach of the Conveyances, at all times during the day. It was agreed that when the Whispering Lakes Pump Station flow was eventually diverted to the Western Trunk Sewer, IEUA will have the right to increase its RP-1 Outfall bypass by up to 3 mgd (not peaked), for a total of 9 mgd average daily capacity. The City has the

option to replace the capacity for IEUA’s use in the Western Trunk Sewer and continue to utilize the Eastern Trunk Sewer.

Table 6-3 **
Summary of Average Daily Wastewater Flow (ADWF) Capacities for Conveyances

| Location | Total ADWF (mgd) | IEUA ADWF (mgd) | City of Ontario ADWF (mgd) | Estimated Ultimate City of Ontario ADWF (mgd) | Extra City ADWF Capacity (mgd) |
|---|------------------|-----------------|----------------------------|---|--------------------------------|
| RP-1 Outfall | | | | | |
| RP-1 to Riverside Dr and Riverside Dr, west of Cucamonga Creek | 20.00 | 20.00 | 0.00 | 0.00 | 0.00 |
| West of Cucamonga Creek, Riverside Dr to Chino Ave | 23.00 | 20.00 | 3.00* | 0.25 | 0.00 |
| Chino Ave, west of Cucamonga Creek to Archibald Ave | 9.00 | 9.00 | 0.00 | 0.00 | 0.00 |
| Eastern Trunk Sewer | | | | | |
| Archibald Ave, Chino Ave to Schaefer Ave | 9.77 | 9.00 | 0.77 | 0.72 | 0.05 |
| Archibald Ave, Schaefer Ave to Edison Ave | 11.00 | 9.00 | 2.00 | 1.40 | 0.60 |
| Archibald Ave, Edison Ave to Eucalyptus Ave | 15.26 | 9.00 | 6.26 | 5.53 | 0.73 |
| Archibald Ave, Eucalyptus Ave to Merrill Ave | 16.19 | 9.00 | 7.19 | 6.16 | 1.03 |
| Archibald Ave, Merrill Ave to City Boundary | 18.37 | 9.00 | 9.37 | 8.14 | 1.23 |
| Adjacent City Boundary, Archibald Ave to Cucamonga Creek | 18.37 | 9.00 | 9.37 | 8.14 | 1.23 |
| Adjacent City Boundary, Cucamonga Creek to Vineyard Ave | 18.37 | 9.00 | 9.37 | 8.14 | 1.23 |
| Kimball Interceptor Sewer Extension | | | | | |
| Vineyard Ave and Kimball Ave | 19.26 | 9.00 | 10.26 | 9.41 | 0.85 |
| * 3.00 mgd temporarily allocated to City of Ontario to facilitate Whispering Lakes Pump Station Diversion | | | | | |

****Table 6-3 does not reflect any changes made by Amendment #1 in Appendix K1.**

The estimated ultimate City flows are shown in Table 6-3. These flows assume that the portion of TAZ area 197 located east of Cucamonga Creek between Riverside Drive and Chino Avenue, is tributary to the existing 15-inch City sewer in Archibald Avenue. The flows enter the Eastern Trunk Sewer at Schaefer Avenue.

The ultimate remaining capacity is also shown in Table 6-3 by reach of sewer, which was calculated under the assumption that the Whispering Lakes Pump Station flow is diverted to the Western Trunk Sewer.