

## **CHAPTER 7**

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### **FEDERAL MAINTENANCE PLAN**

**Introduction**

**Attainment Inventory**

**Maintenance Demonstration**

**Ambient Air Quality Monitoring**

**Contingency Plan**

**Verification of Continued Attainment**

**Conformity**

**Conclusions**

## 7. FEDERAL MAINTENANCE PLAN

### 7.1 INTRODUCTION

This 2007 Clean Air Plan (2007 Plan) is being prepared by the Santa Barbara County Air Pollution Control District (APCD) to satisfy the provisions of the Federal Act that apply to our current classification as a maintenance area for the federal 8-hour ozone standard.

On April 30, 2004, the federal Environmental Protection Agency (USEPA) designated and classified areas for the federal 8-hour ozone standard. Santa Barbara County was designated as an attainment/unclassifiable area for this standard with the designation becoming effective on June 15, 2004<sup>1</sup>. The USEPA also promulgated regulations implementing the federal 8-hour ozone standard. Areas such as Santa Barbara County – i.e., those which are designated attainment/unclassifiable for the federal 8-hour standard and which are also subject to an approved maintenance plan for the federal 1-hour ozone standard under Section 175A of the Federal Act - are required to submit a 10-year maintenance plan under Section 110(a)(1) of the Federal Act. This 10-year maintenance plan must demonstrate maintenance of the federal 8-hour ozone standard until 2014 and is to be submitted to USEPA as a State Implementation Plan revision no later than three years after the effective date of an area's 8-hour ozone designation. Consequently Santa Barbara County must submit its Section 110(a)(1) maintenance plan no later than June 15, 2007.

The USEPA issued guidance for states in preparing maintenance plans required under section 110(a) (1)<sup>2</sup>. The five required plan components and how this 2007 Plan addresses those components are discussed in sections 7.1 to 7.5.

### 7.1 ATTAINMENT INVENTORY

*The attainment inventory should be based on actual "typical summer day" emissions of volatile organic compounds and nitrogen oxides with the base year being either 2001, 2002 or 2003.*

As documented in Chapter 3, the 2002 planning inventory for ROC and NO<sub>x</sub> fulfills this requirement.

### 7.2 MAINTENANCE DEMONSTRATION

*The maintenance plan must demonstrate how the area will remain in compliance with the 8-hour standard for a ten year period following the effective date of designation as unclassifiable/attainment. At a minimum the plan must project attainment for 2014. One method of showing attainment is to demonstrate that the future levels of ozone precursor emissions will not exceed the level of ozone precursor emissions sufficient to attain the 8-hour standard.*

Chapters 3 presents NO<sub>x</sub> and ROC planning emission inventories for the base year 2002 and Chapter 6 shows these inventories for the future years 2010, 2015 and 2020. The inventories are divided into two geographic regions, **Santa Barbara County** and the **Outer Continental Shelf (OCS)**. The Santa Barbara County emission inventory encompasses all onshore sources of air pollution within Santa Barbara County

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<sup>1</sup> USEPA revoked the 1-hour federal ozone standard one year after the effective date of the designation for the federal 8-hour ozone standard. Thus for Santa Barbara County, the 1-hour federal ozone standard was revoked on June 15, 2005.

<sup>2</sup> Memorandum from Lydia N. Wegman, Director, Air Quality Strategies and Standards Division, USEPA to Air Division Directors, Regions I-IX, May 20, 2005.

and the State Tidelands (three miles from the shoreline). The OCS emission inventory includes pollution sources 25 miles beyond the State Tidelands boundary offshore Santa Barbara County.

As illustrated in Figure 7-1, NO<sub>x</sub> emissions in Santa Barbara County decline in a continuous fashion from 40.69 tons/day in 2002 to 27.85 tons/day in 2015 and to 23.17 in 2020. Similarly, ROC emissions decrease from 38.44 tons/day (2002) to 36.63 tons/day (2015) and to 35.81 tons/day by 2020. This trend results from reductions in on-road mobile sources and implementation of the State Act's every feasible measure requirement. NO<sub>x</sub> and ROC emissions from OCS sources shown in Figure 7-2 however, increase from 2002 through 2020. ROC emissions grow from 3.29 tons/day (2002) to 3.77 tons/day (2015) to 4.05 tons/day in 2020. NO<sub>x</sub> emissions more than double from 2002 to 2020 (37.38 to 77.23 tons/day) and 2015 emissions are at 66.42 tons/day.

Figure 7-3 illustrates the combined Santa Barbara County and OCS emissions. While total ROC emissions decline from 41.74 tons/day in 2002 to 40.40 tons/day in 2015 and even further to 39.9 tons/day in 2020, increases in NO<sub>x</sub> emissions from marine vessels will overwhelm stationary source and on-road motor vehicle NO<sub>x</sub> reductions and show a dramatic increase due to the impact of growth in marine shipping emissions. Total NO<sub>x</sub> emissions increase by about 29% from 2002 to 2020 (78.07 to 100.4 tons/day).

When we examine the milestone year 2014 (see Figure 7-3), total ROC emissions are 40.74 tons/day or 1.00 ton/day less than in 2002 (41.74 tons/day), our baseline year. Total NO<sub>x</sub> emissions are at 93.41 tons/day or 15.34 tons/day greater than in 2002 (78.07 tons/day). As NO<sub>x</sub> emissions from onshore and State Tidelands sources are projected to decline linearly from 2002 through 2020 (Figure 7-1), this would suggest that 2014 marine vessel NO<sub>x</sub> emissions need to be reduced by approximately 20 % in order for Santa Barbara to demonstrate continued maintenance of the 8-hour standard in 2014.

The impact of marine vessel NO<sub>x</sub> emission is shown even more dramatically in Figure 7-4. When marine vessel emissions are not included, NO<sub>x</sub> emissions will decline steady from 2002 to 2020. With increasing difficulty in obtaining added reductions from onshore sources, further reductions will clearly need to come from controlling marine shipping activities in order to meet air quality goals. This clearly indicates that additional action from the USEPA and ARB is required.

It is important to note that increases in NO<sub>x</sub> emissions from marine shipping activities may not directly correlate to increases in ozone levels in Santa Barbara County since potential impacts are highly dependent on meteorological conditions. In fact, air quality has been improving in Santa Barbara County while marine vessel transits and emissions have been increasing over the last several years. To fully understand the impacts of marine vessel emissions on county-wide ozone levels, however, would require the use of photochemical modeling techniques. This would allow for an evaluation of potential impacts from all sources of ozone precursors (ROC and NO<sub>x</sub>), both onshore and offshore, and would also provide an assessment of the relative contribution of impacts from marine vessel emissions on ozone concentrations. Since the resources and expertise required to perform photochemical modeling are beyond our capabilities, we must defer the need for such an exercise to the discretion of USEPA and ARB.

### **7.3 AMBIENT AIR QUALITY MONITORING**

*The State should continue to operate air quality monitors in accordance with 40 CFR 58 to verify maintenance of the 8-hour standard. Any modifications to the ambient monitoring network should be accomplished through close consultation with the EPA Regional office.*

Santa Barbara County's ambient monitoring network is discussed in Chapter 2. Monitoring is conducted by the ARB, APCD and industry sources. Monitors operated by the ARB and APCD are part of the State and Local Air Monitoring System while monitors operated by industry, at the direction of the APCD, are called Prevention of Significant Deterioration stations. Methods and procedures used in monitoring follow guidelines prescribed by the ARB and the USEPA.

#### **7.4 CONTINGENCY PLAN**

*The State must develop a contingency plan that at a minimum will ensure that any violation of the 8-hour standard is promptly corrected. The contingency plan should ensure that the contingency measures are adopted expeditiously once they are triggered. The trigger for implementing contingency measures should, at a minimum, be upon a monitored violation of the 8-hour ozone standard.*

Chapter 4 addresses the emission control measures proposed by the APCD as contingency measures. As discussed in Chapter 4, the *proposed* 2007 Plan control measures (Table 4-3) will serve as contingency measures to satisfy this federal requirement. While Table 4-3 also provides an adoption schedule, should a violation of the federal 8-hour ozone standard occur earlier than the adoption dates shown, the APCD will commence adoption of these contingency measures within 24 months of the recorded violation.

#### **7.5 VERIFICATION OF CONTINUED ATTAINMENT**

*The maintenance plan should indicate how the State will track the progress of the maintenance plan. States should develop interim emission projections to show a trend analysis for maintenance of the standard.*

Every three years we are required by the State Act (Health and Safety Code sections 40924 and 40925) to update our clean air plan to attain the state 1-hour ozone standard. Each of the following elements is updated from the previous update:

- Local air quality information
- Emission inventory and future emission estimates
- Every feasible control measure

We will use these triennial updates to track the progress of the maintenance plan.

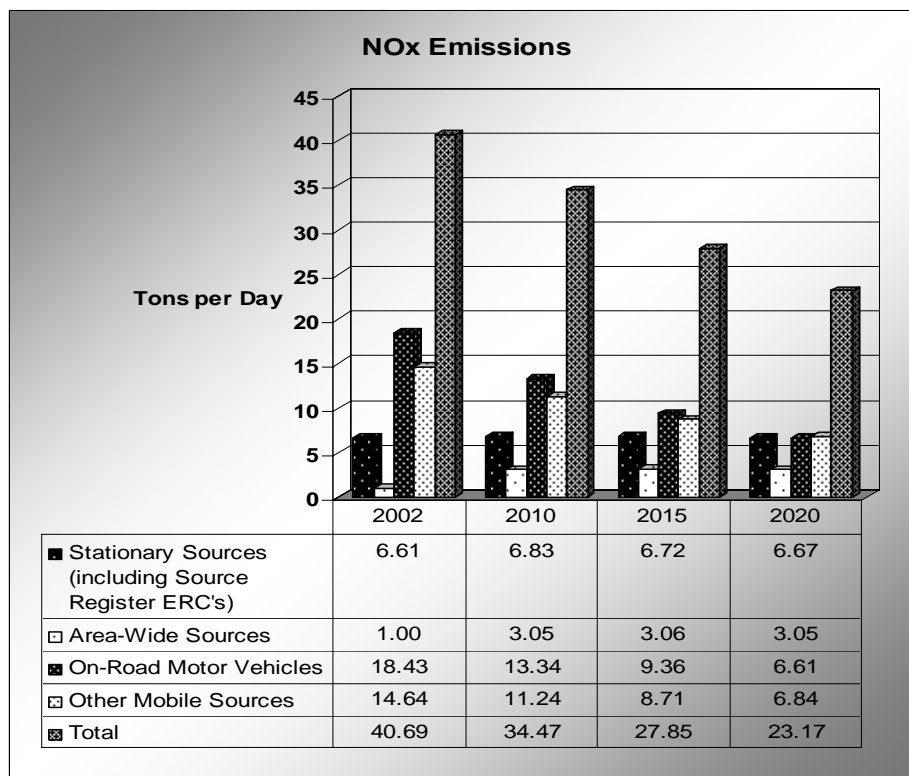
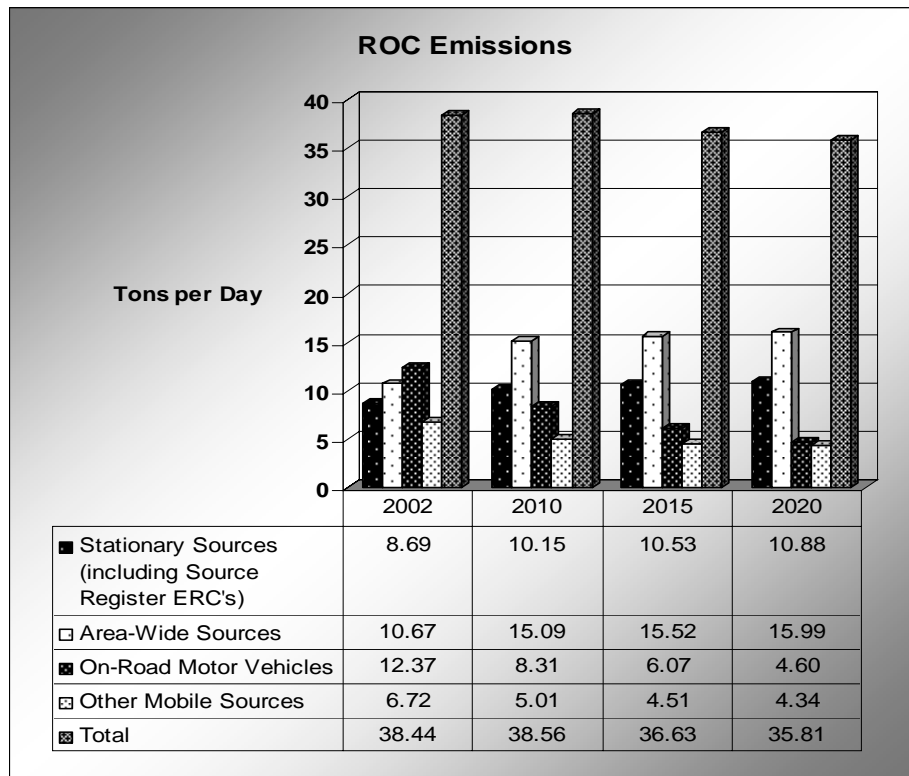
#### **7.6 CONFORMITY**

Conformity for the federal 1- and 8-hour ozone standards no longer applies to Santa Barbara County. Areas such as Santa Barbara County, which were never designated nonattainment for the 8-hour ozone standard and which are not obligated to develop a maintenance plan under Section 175(A) of the Federal Act, are not subject to conformity for the 8-hour standard. Additionally, since the 1-hour ozone standard has been revoked, conformity for that standard no longer applies.

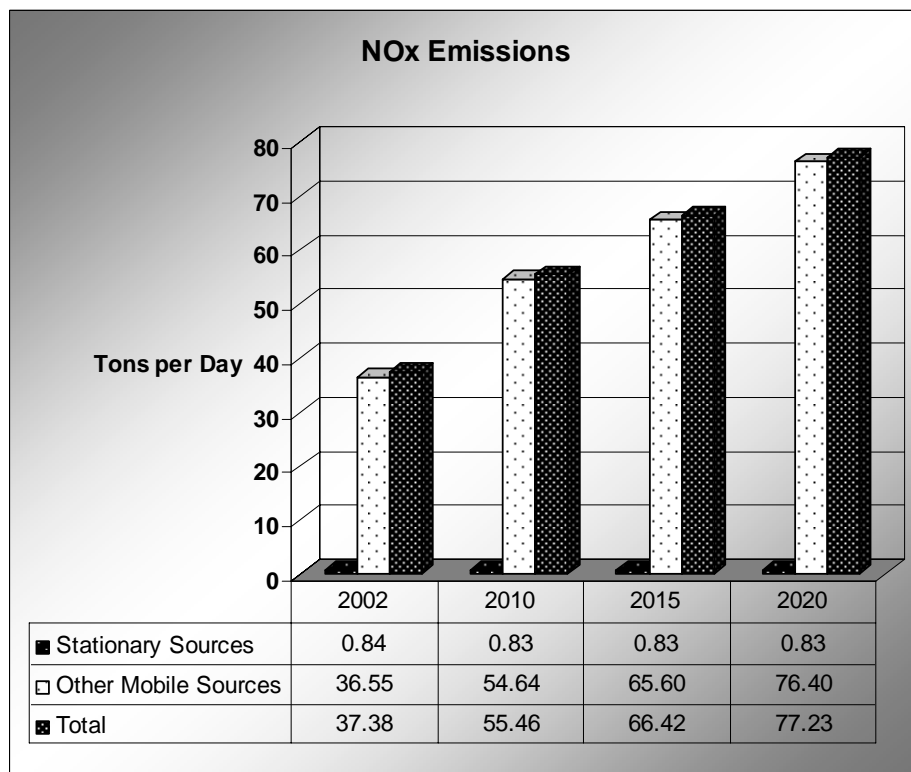
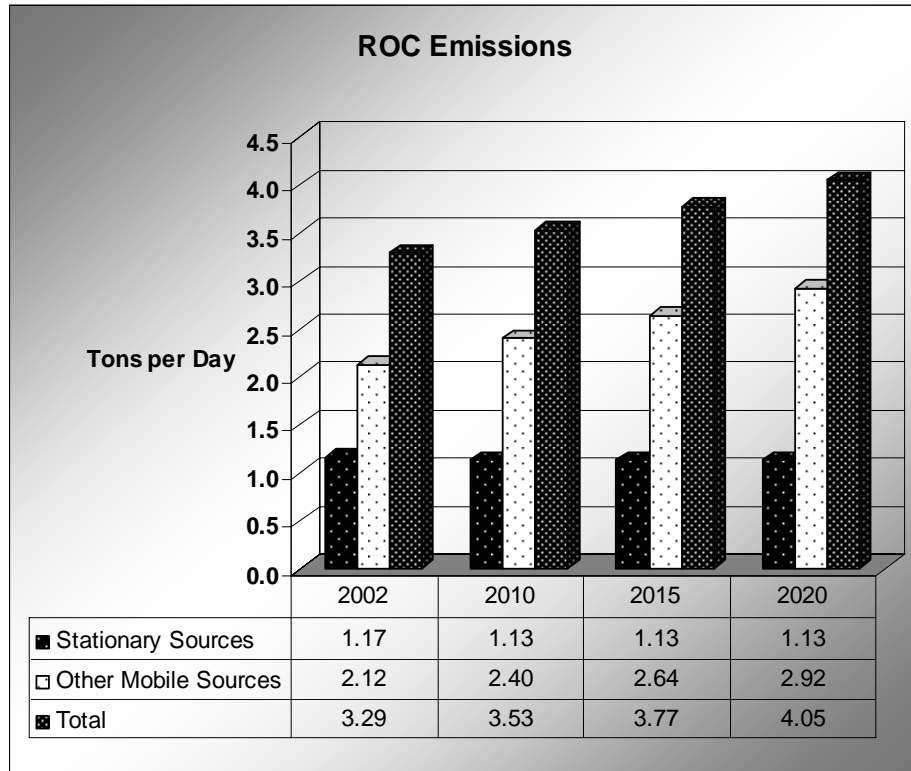
## **7.6 CONCLUSION**

This chapter addresses USEPA's requirements for maintenance plans prepared pursuant to Section 110(a)(1) of the Federal Act. As discussed, emissions of both NO<sub>x</sub> and ROC from onshore sources and those in the State Tidelands in 2014 are predicted to be lower than the base year 2002. However when NO<sub>x</sub> emissions from marine vessels in the Outer Continental Shelf are added to those from onshore and State Tideland sources, NO<sub>x</sub> emissions in 2014 will be over 15 tons/day greater than those in 2002. With increasing difficulty in obtaining added reductions from onshore sources, further reductions will clearly need to come from controlling marine shipping activities in order to meet air quality goals. This clearly indicates that additional action from the USEPA and ARB is required.

**Figure 7-1**  
**Santa Barbara County Onshore ROC & NO<sub>x</sub> Emissions**

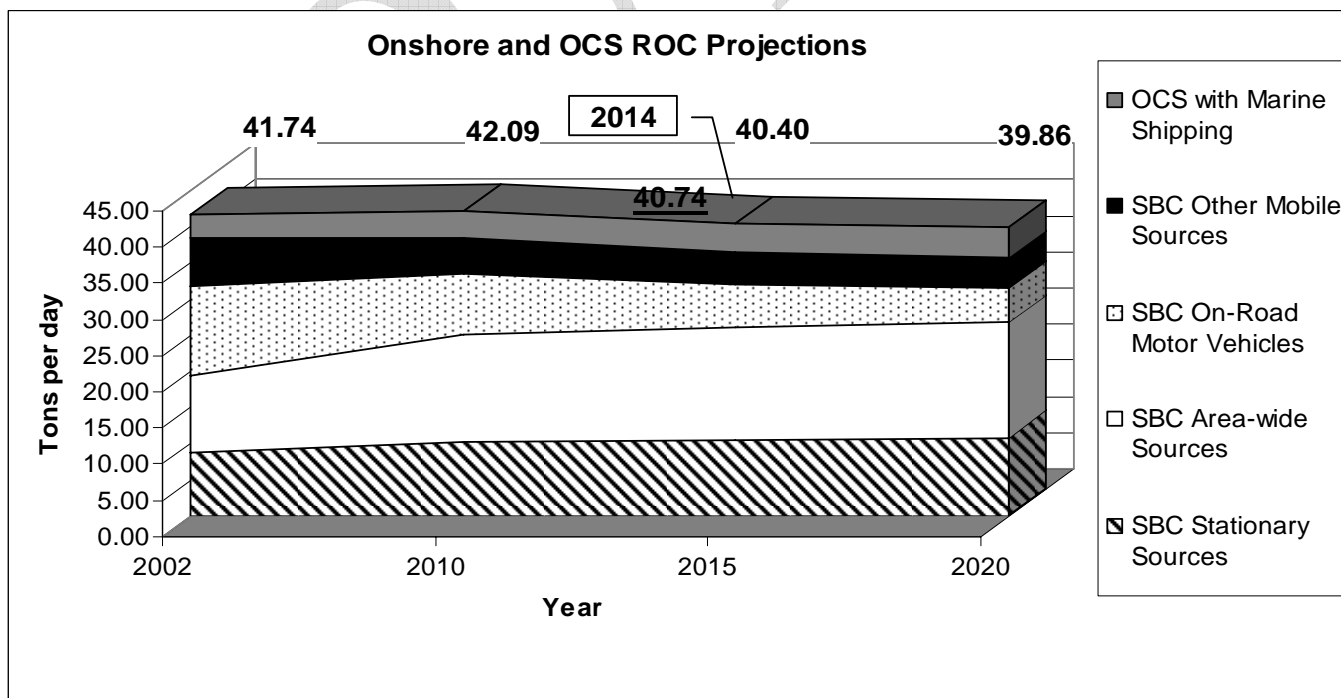
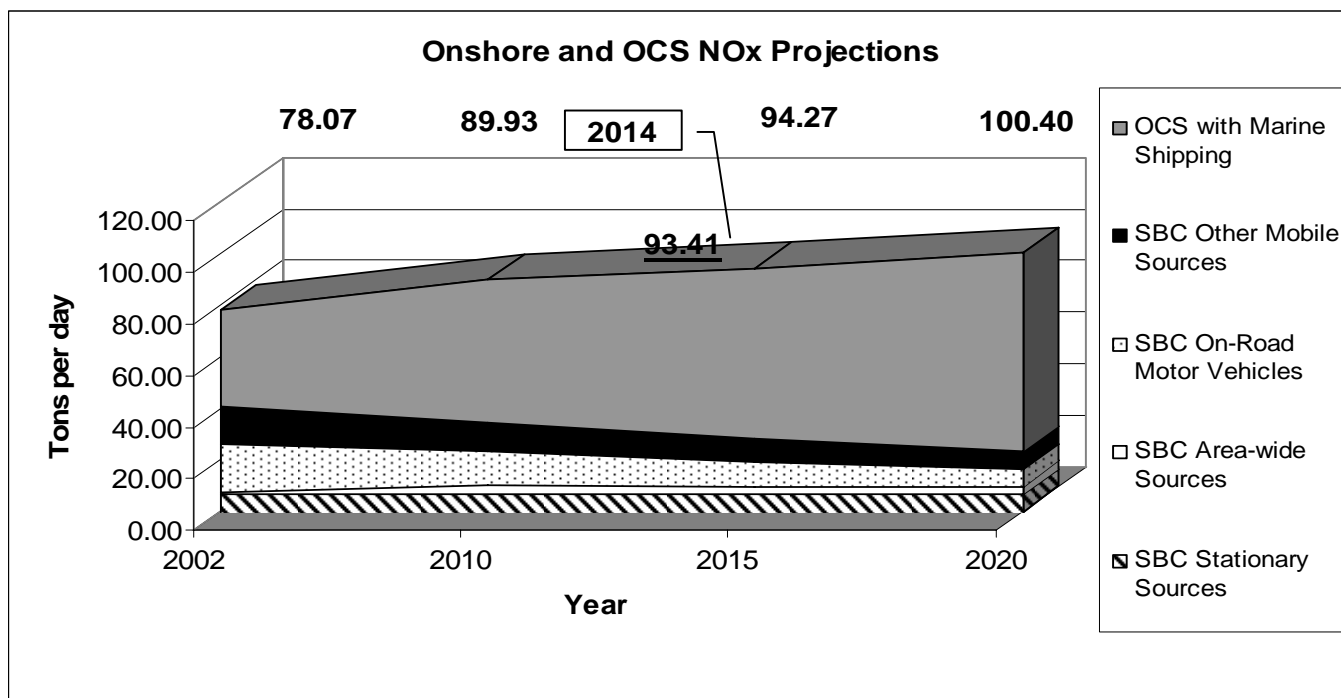


**Figure 7-2**  
**OCS ROC & NO<sub>x</sub> Emissions**



**Figure 7-3**

**Santa Barbara County and OCS NOx and ROC Emissions Forecast**





**Figure 7-4**  
**Santa Barbara County and OCS NOx Emissions Forecast**  
**Marine Vessels Excluded**

