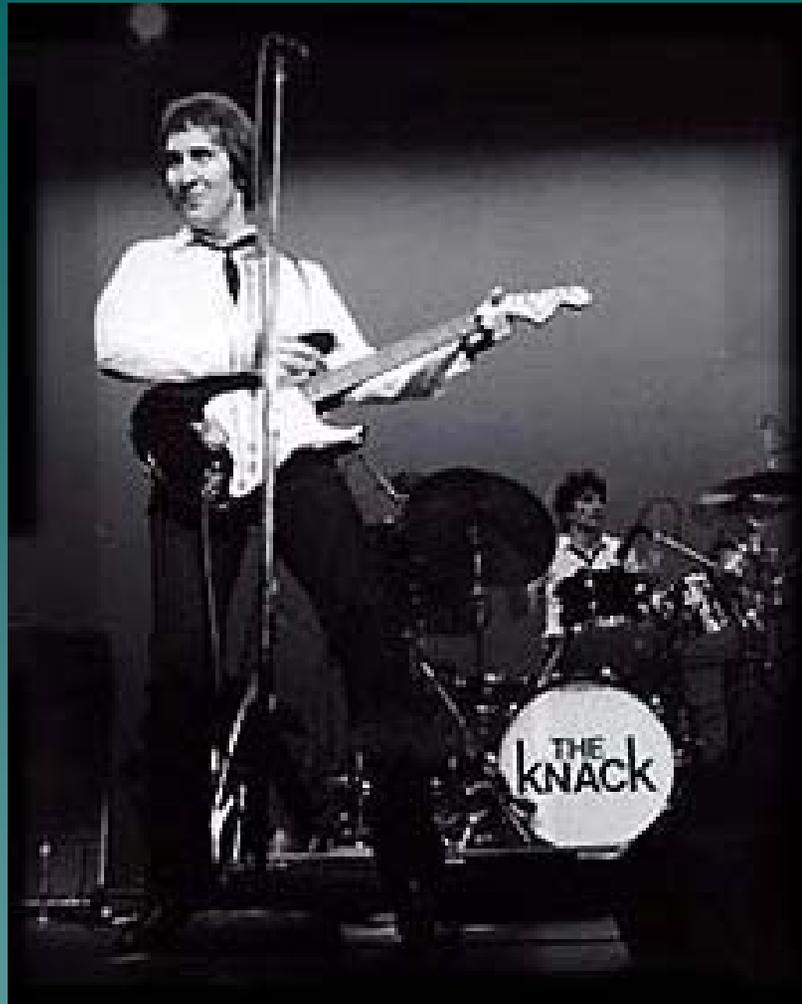


Ozone

Washington State
and the NAAQS

What are the NAAQS?



They're not these guys...

NAAQS

(National Ambient Air Quality Standards)

- ◆ There are currently two NAAQS for ozone
 - 8-Hour Standard
 - 1-Hour Standard

What is an exceedance?

An exceedance is not a “violation” of the standard –but it *may* lead to one

An exceedance occurs when:

8-hour average \geq .085 ppm

1-hour average \geq .125 ppm

What is a violation?

- ◆ The **8-hour** standard is violated when: **design value** of a site is $\geq .085$ ppm
- ◆ The **1-hour** standard is violated when: the number of exceedances averaged over the three most recent years at a given site is > 1
- ◆ A **violation** results in “non-attainment” status

How are the 8-Hour standard design values calculated?

- ◆ Daily maximum 8-hour-averages are determined for each 24-hour calendar day
- ◆ The annual 4th-highest daily maximum 8-hour-average is then determined at each site
- ◆ The 4th-highest daily maximum 8-hour-average is then averaged over the three most recent years; this is called the “design value.”

How are 8-hour design values calculated?

3-year-average of the 4th-highest daily maximum 8-hour-average at a given site

For example:

$$\frac{[(2002 \text{ 4th - high}) + (2003 \text{ 4th - High}) + (2004 \text{ 4th - High})]}{3} = \text{design value}$$

What is an 8-hour NAAQS Violation?

- ◆ A NAAQS violation occurs when the design value of any given site is $\geq .085$ ppm

For example:

$$\frac{(.089 + .083 + .090)}{3} = .087$$

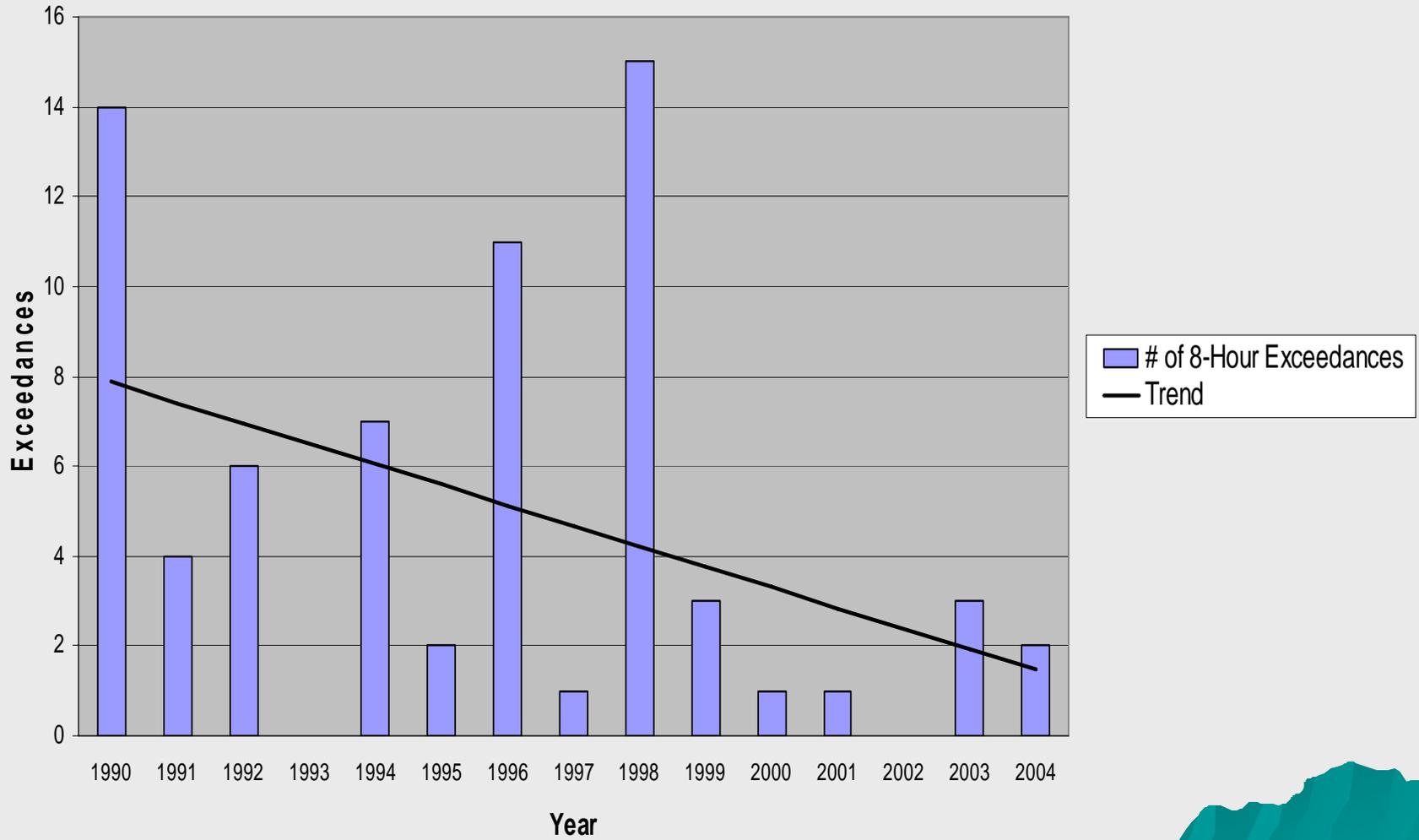
A violation!!!

How Close is Washington to a violation of the 8-hour NAAQS?

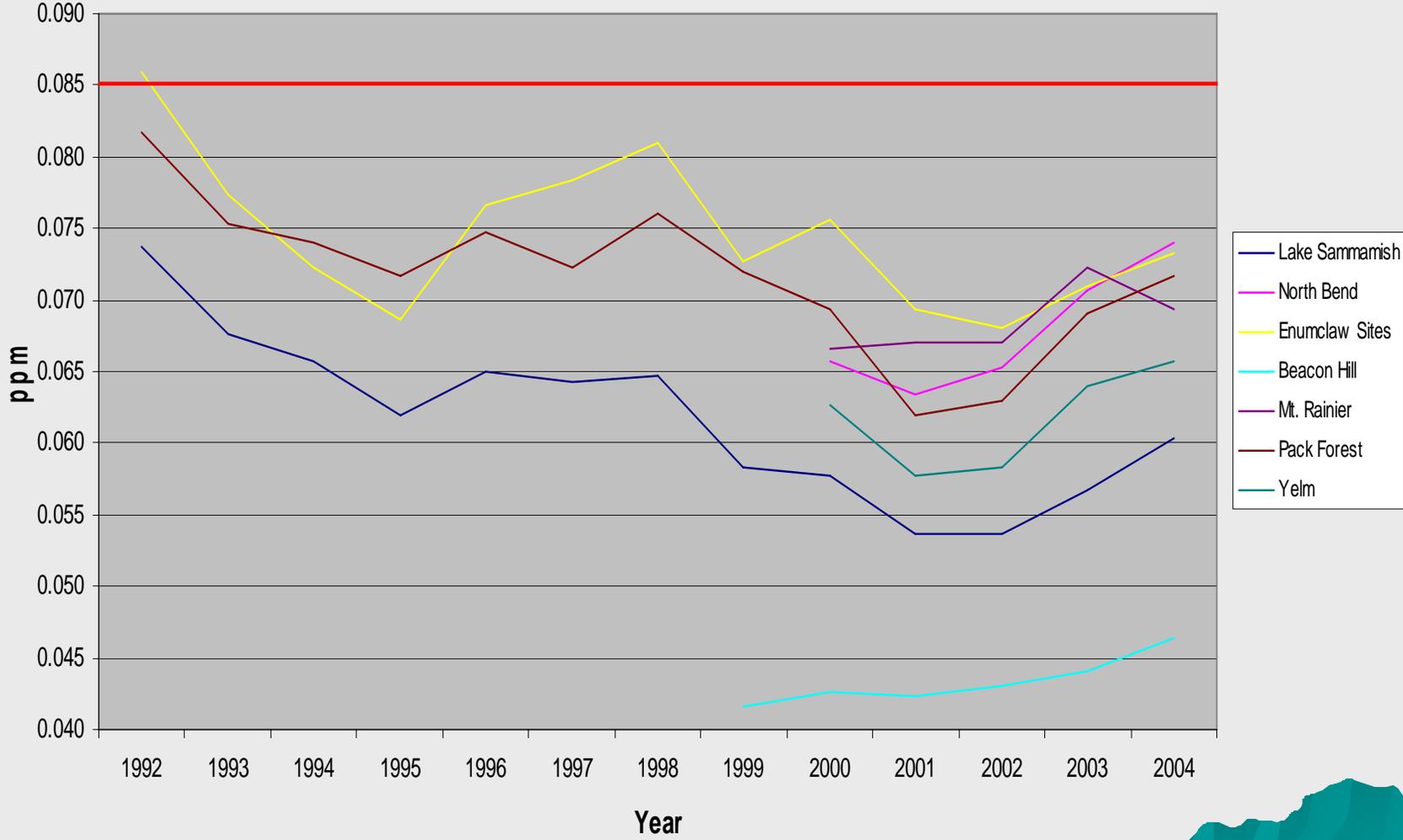
It's a mixed bag!



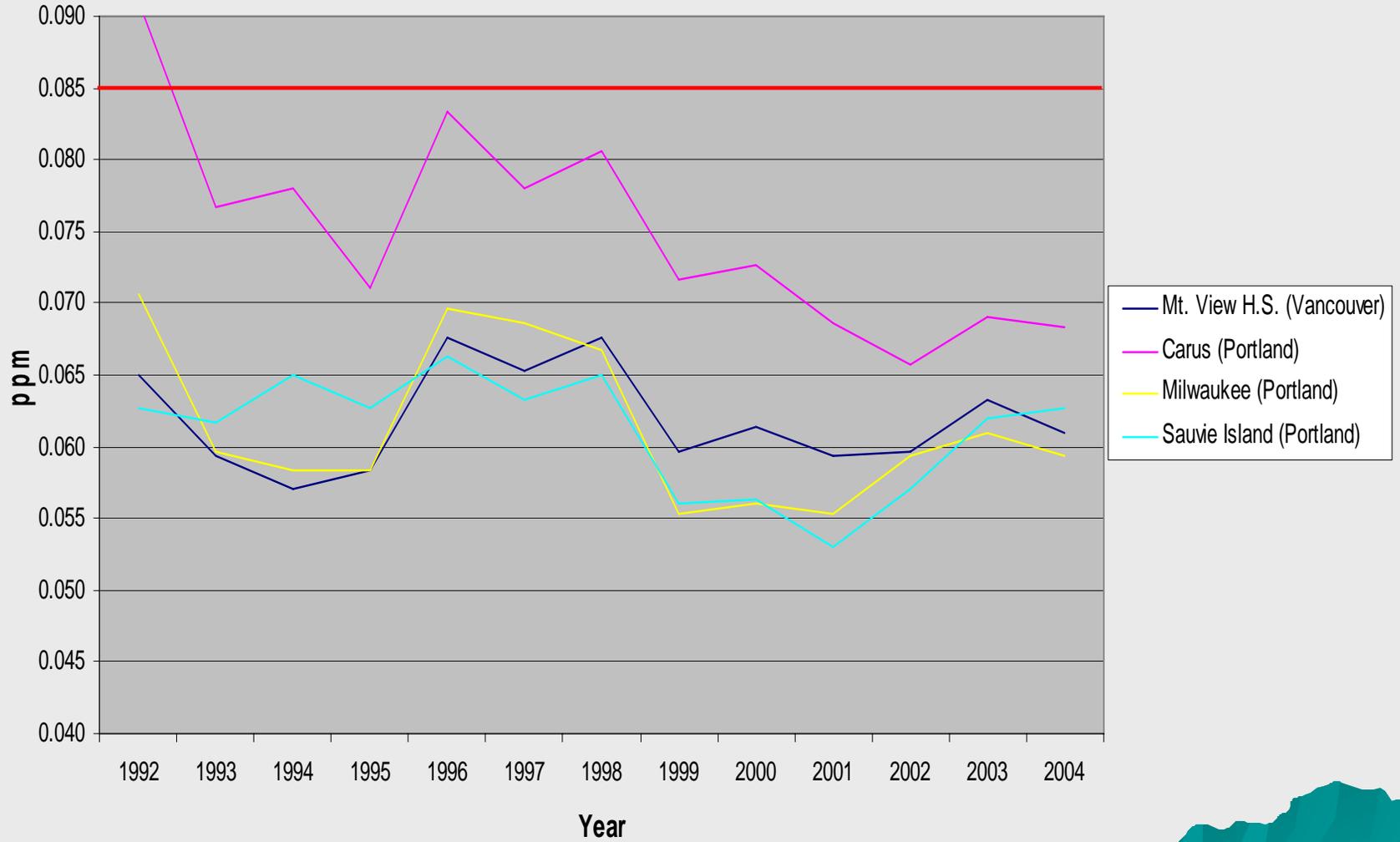
8-Hour Ozone Exceedances (1990-2004)



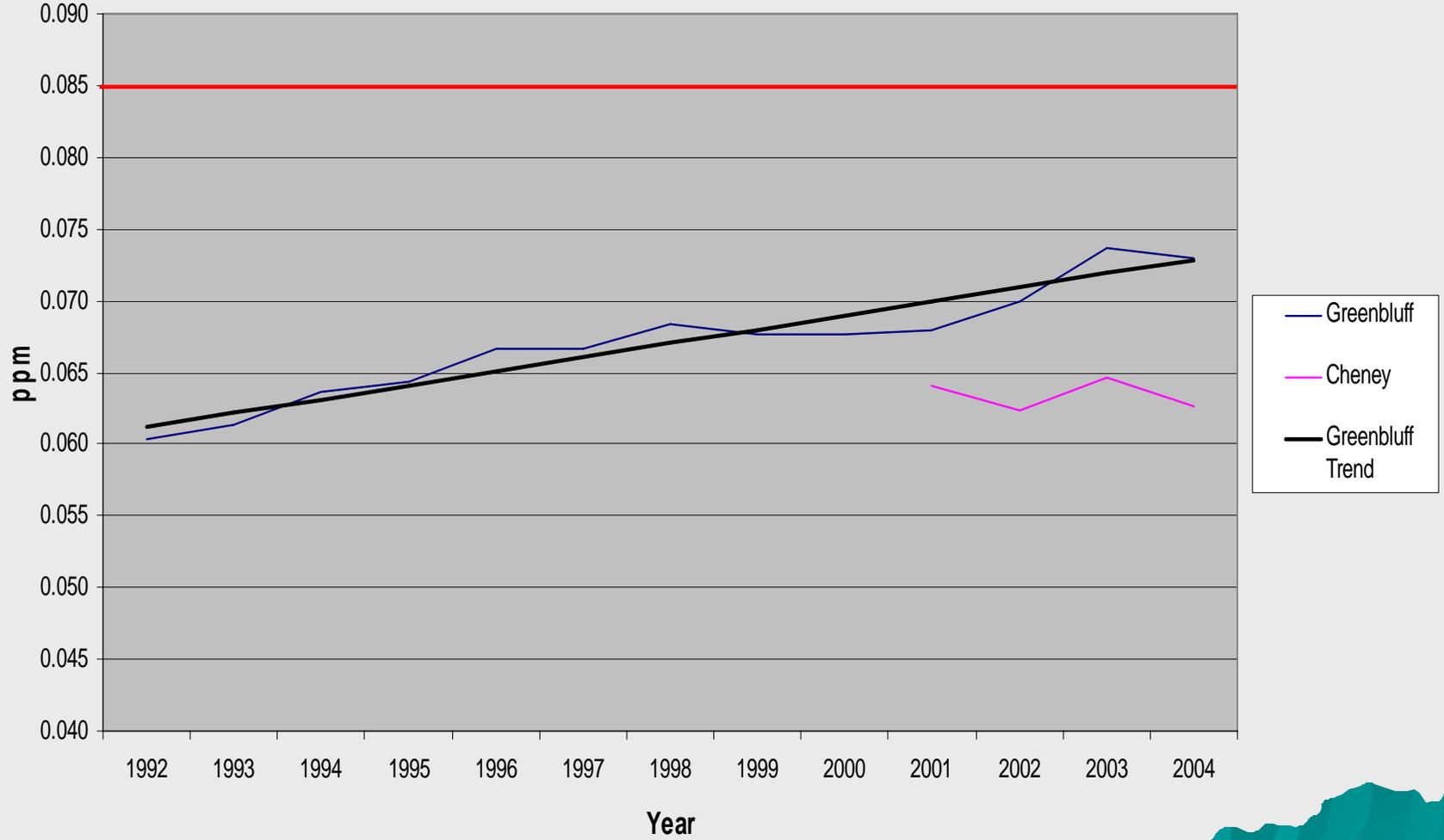
Puget Sound 8-Hour Ozone Design Values (1992-2004)



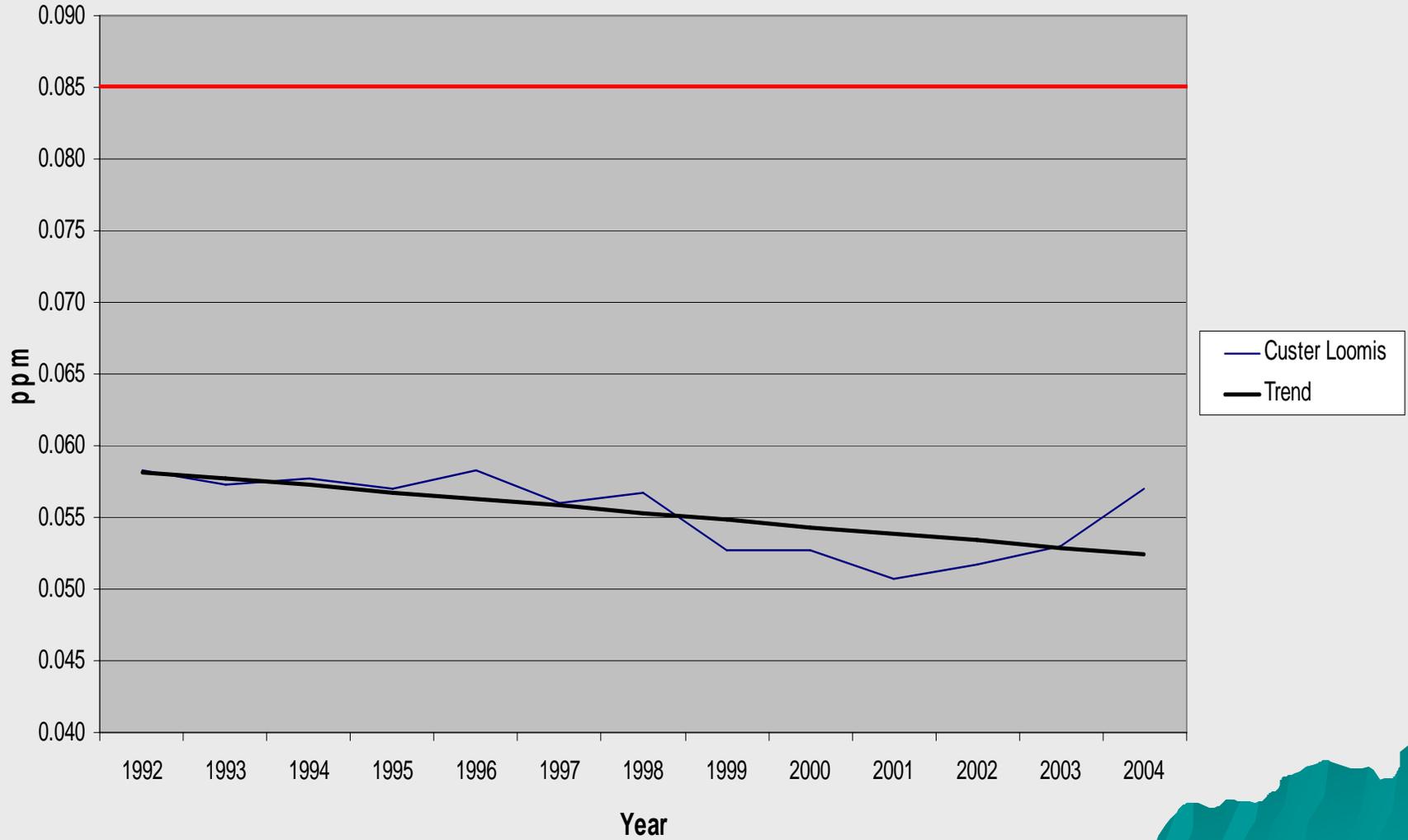
Portland/Vancouver 8-Hour Ozone Design Values (1992-2004)



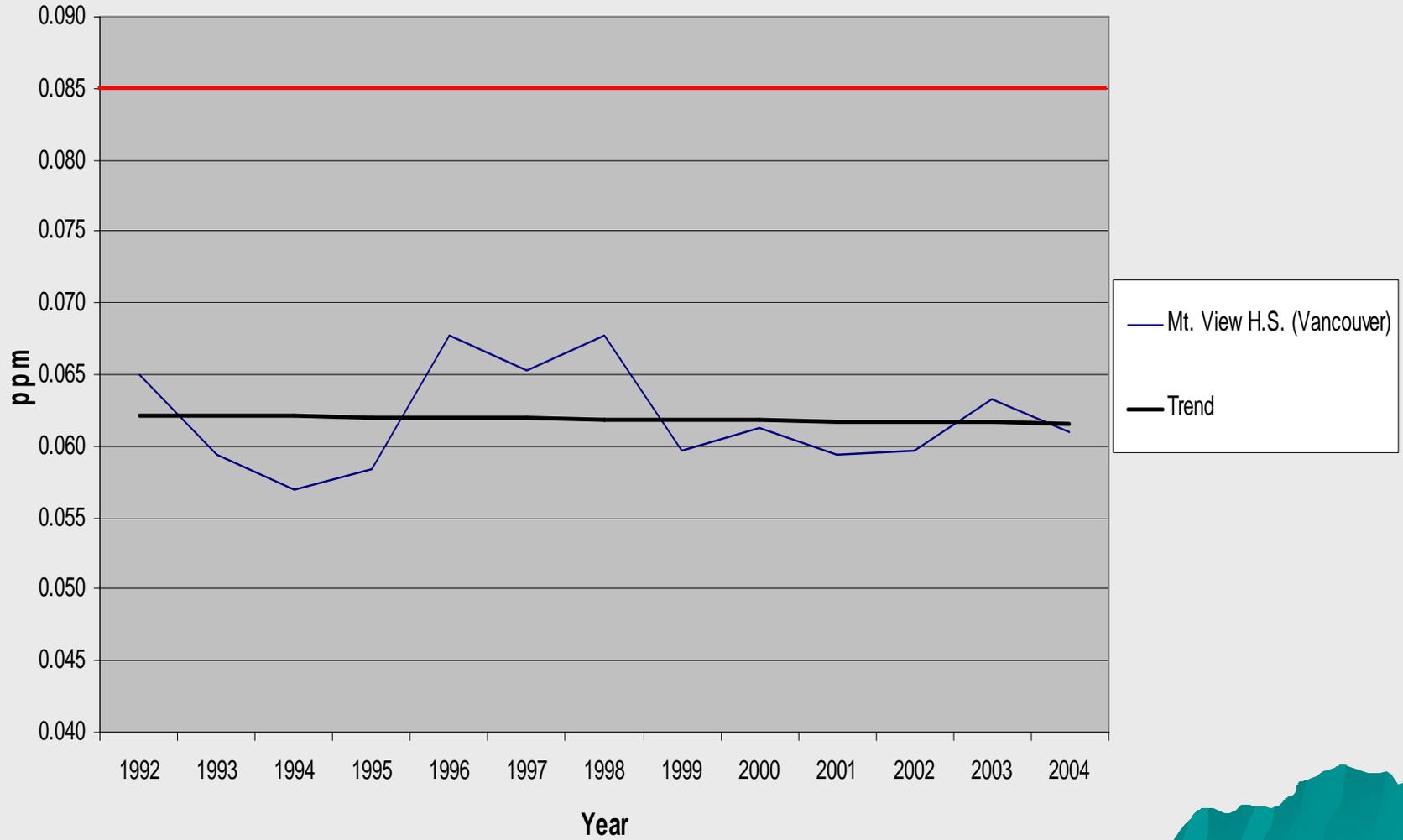
Spokane 8-Hour Ozone Design Values (1992-2004)



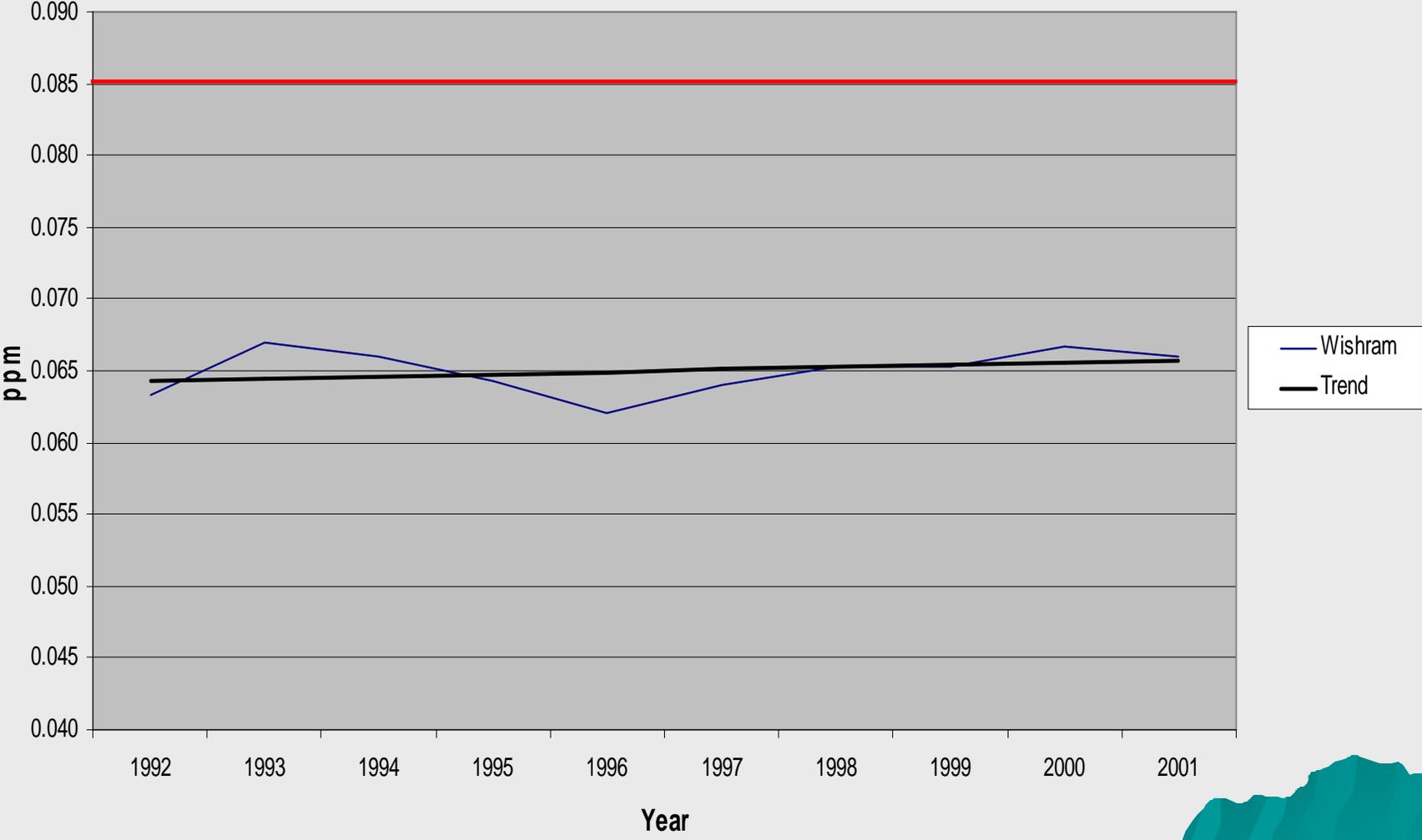
Custer Loomis 8-Hour Ozone Design Values (1992-2004)



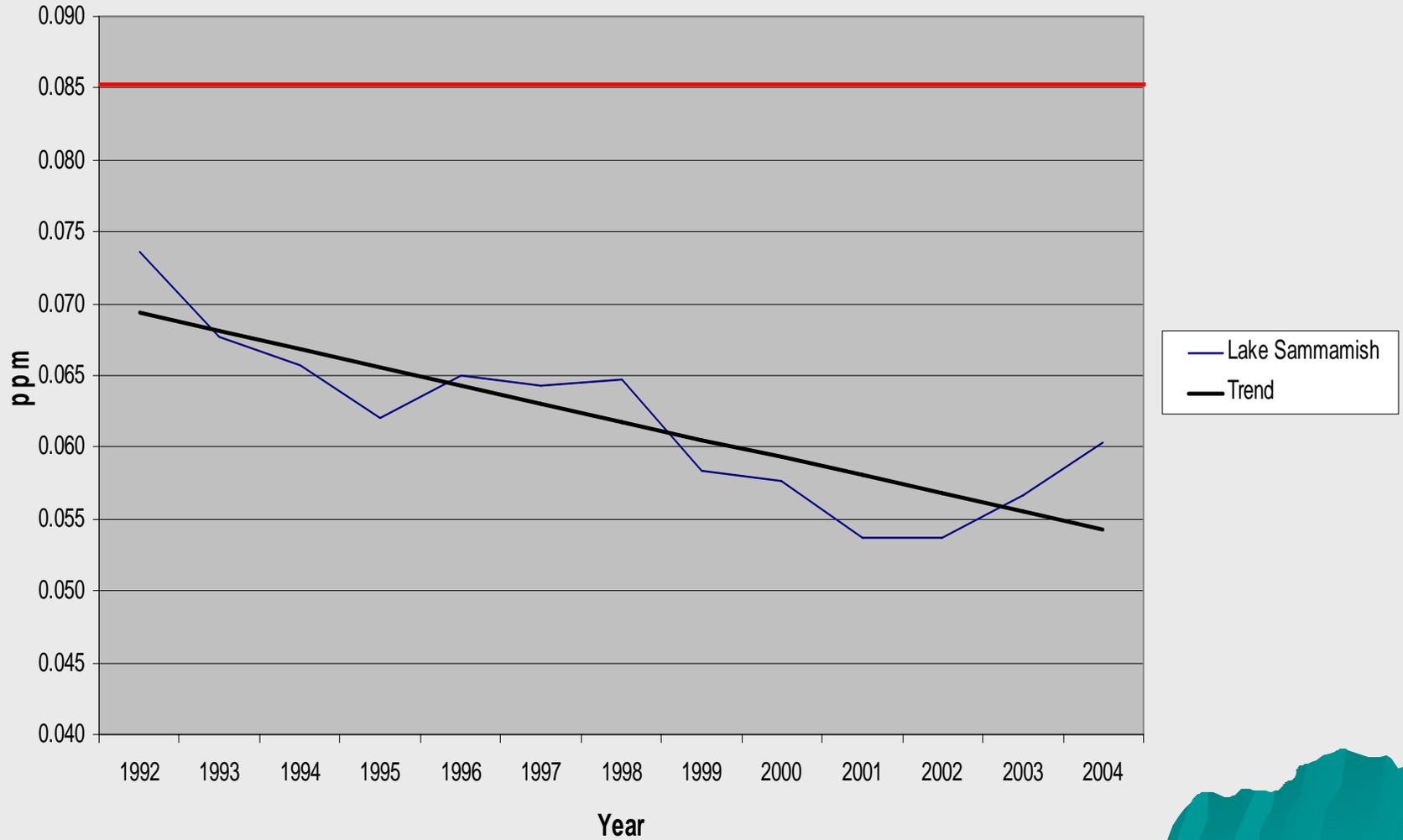
Vancouver 8-Hour Ozone Design Values (1992-2004)



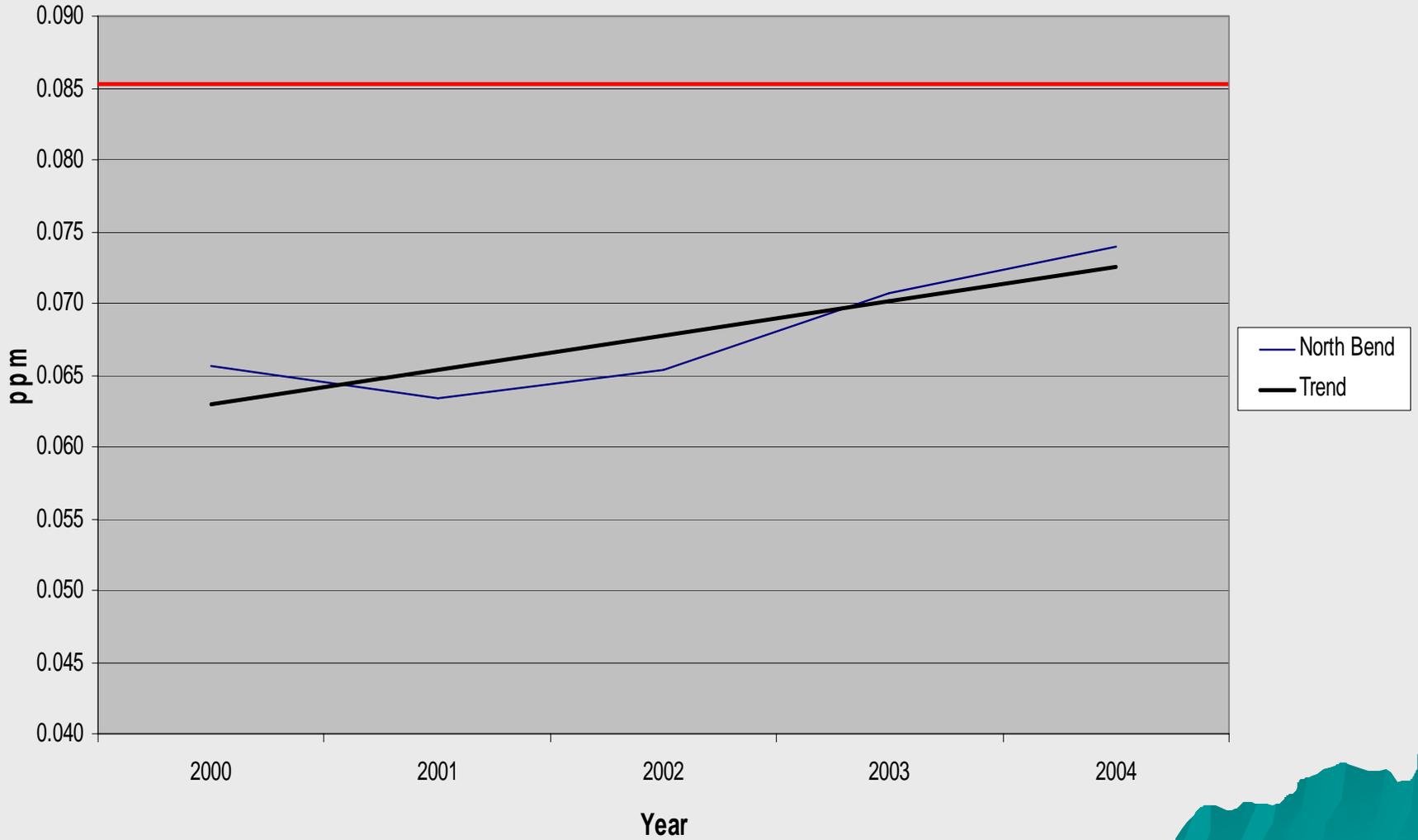
Wishram 8-Hour Ozone Design Values (1992-2004)



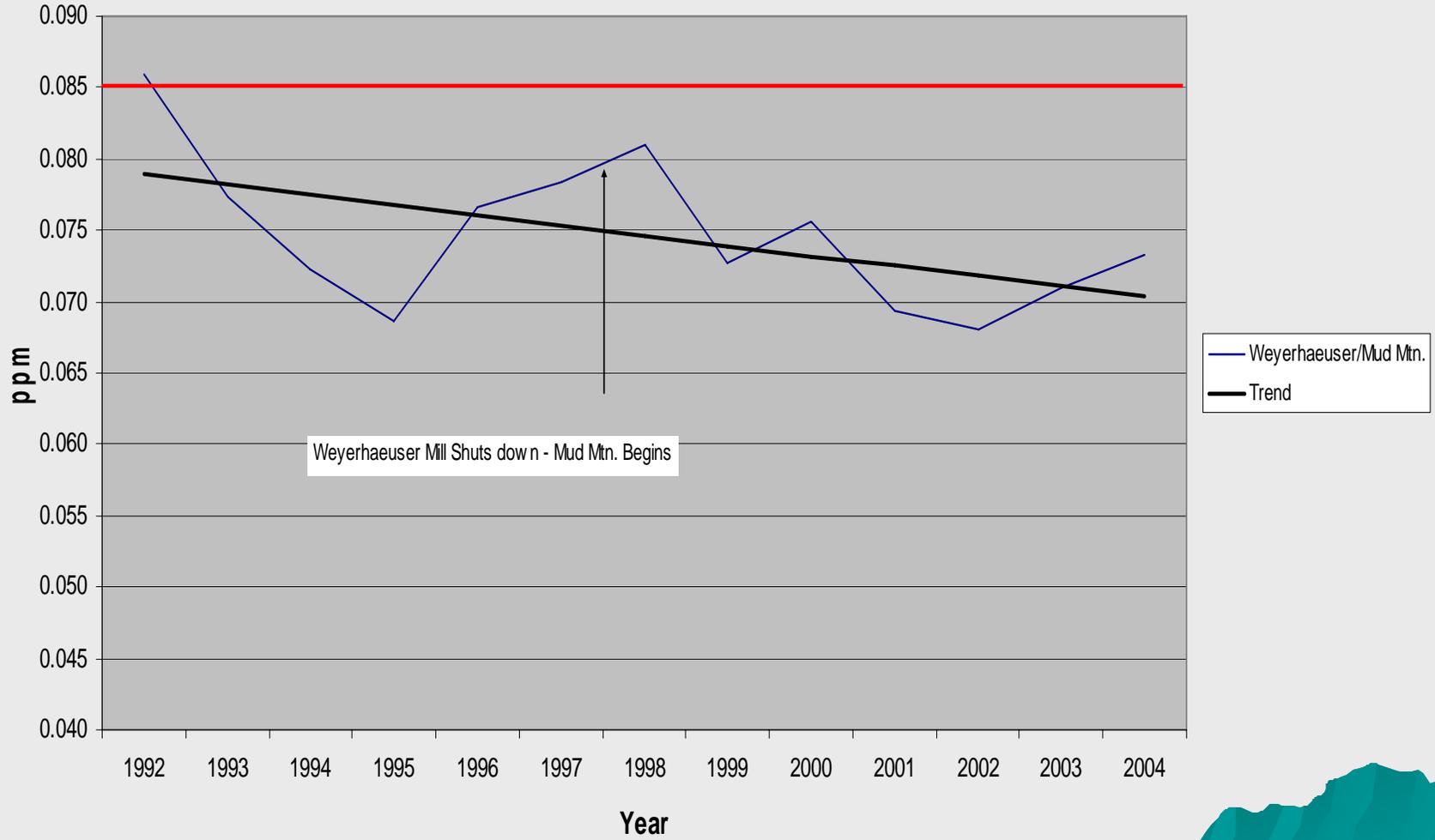
Lake Sammamish 8-Hour Ozone Design Values (1992-2004)



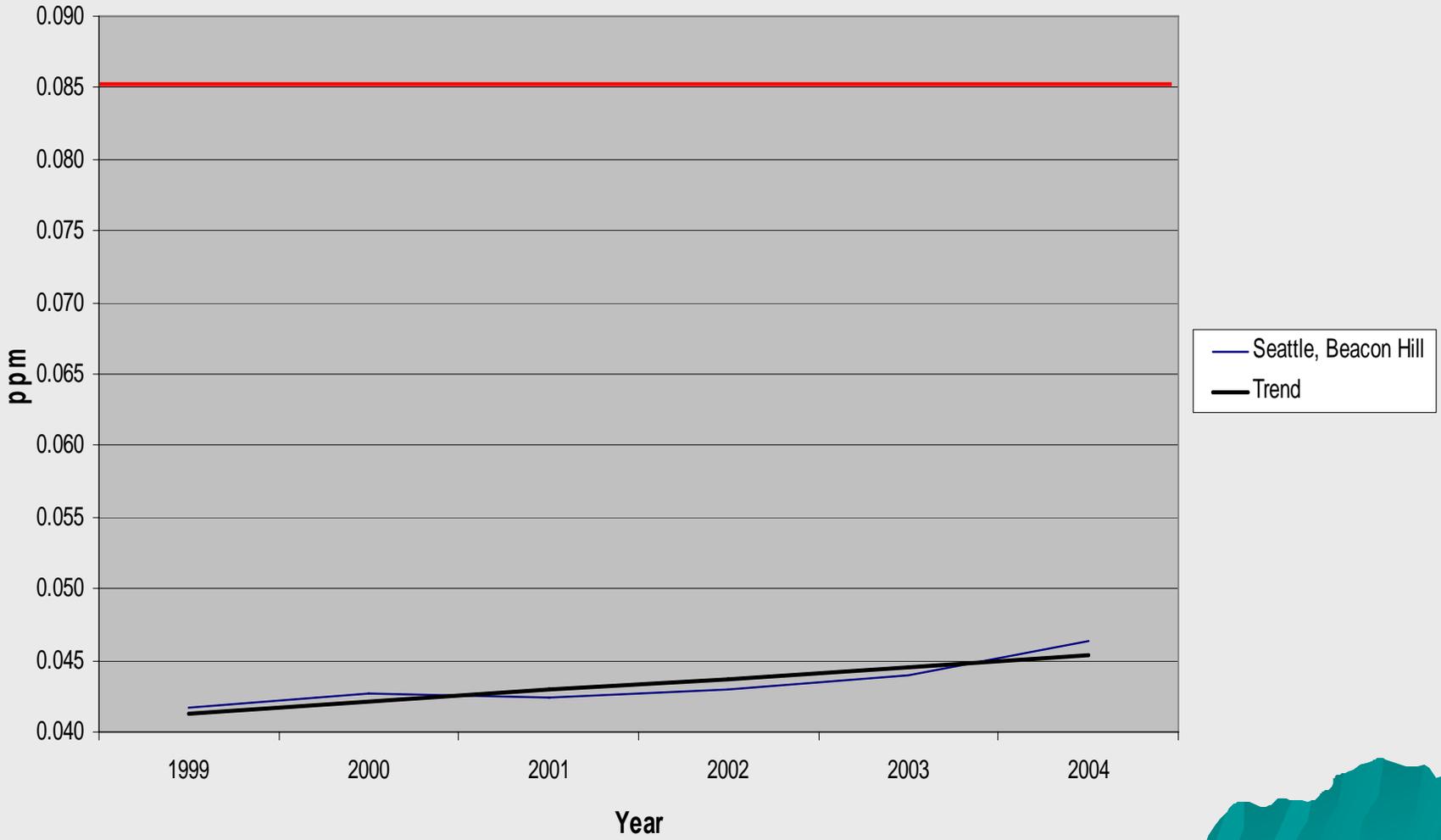
North Bend 8-Hour Ozone Design Values (2000-2004)



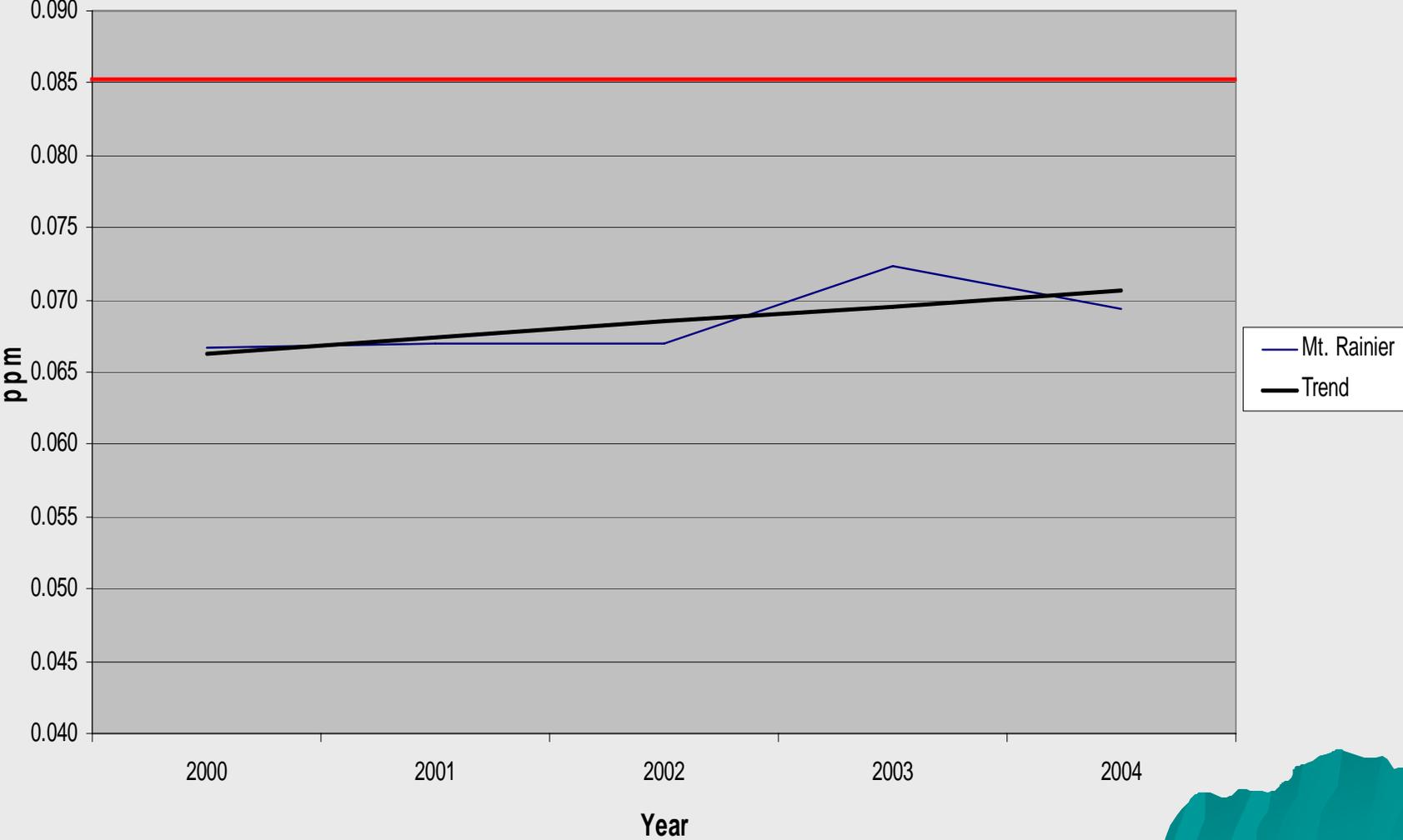
Enumclaw Ozone 8-Hour Ozone Design Values (1992-2004)



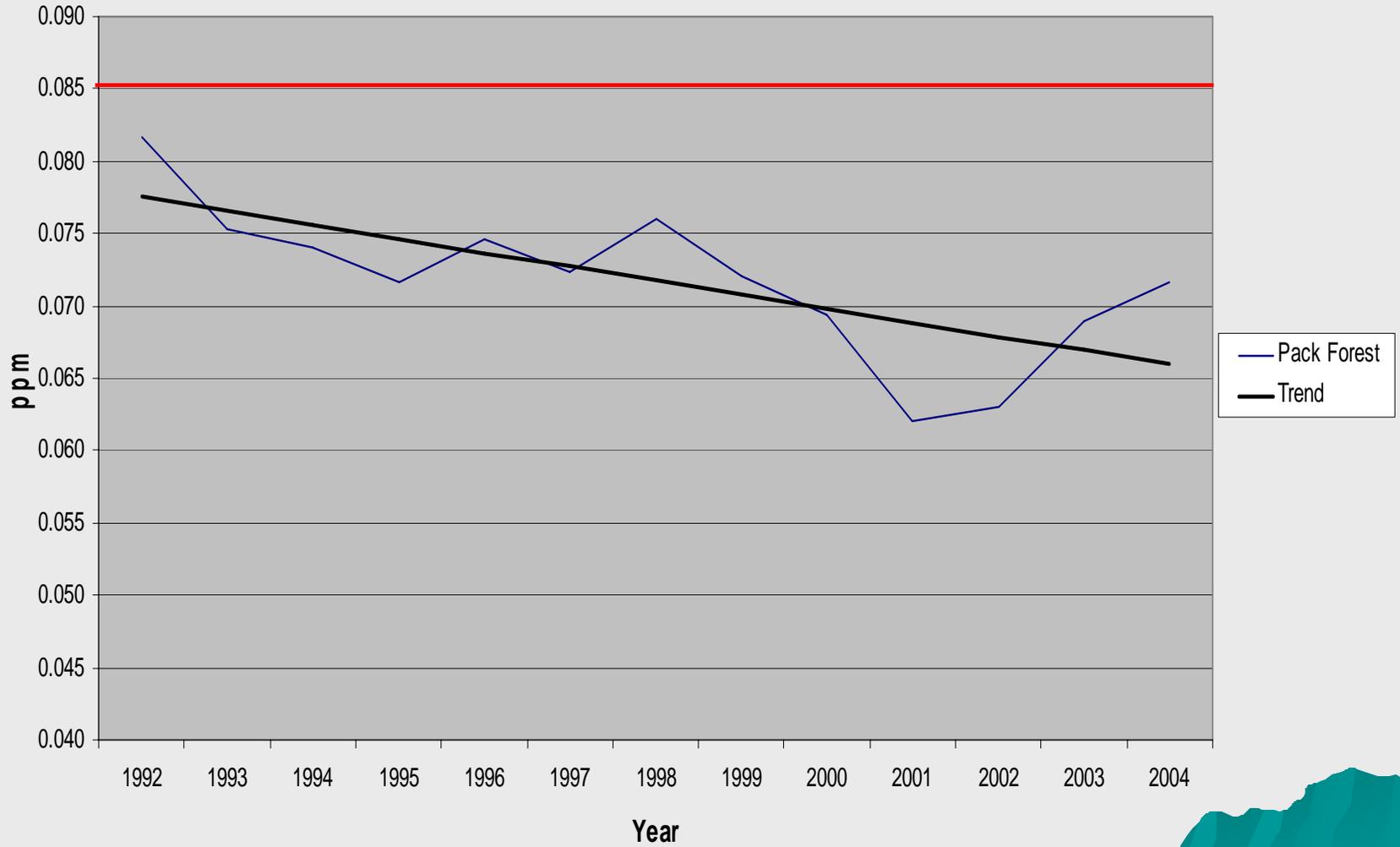
Seattle, Beacon Hill 8-Hour Ozone Design Values (1999-2004)



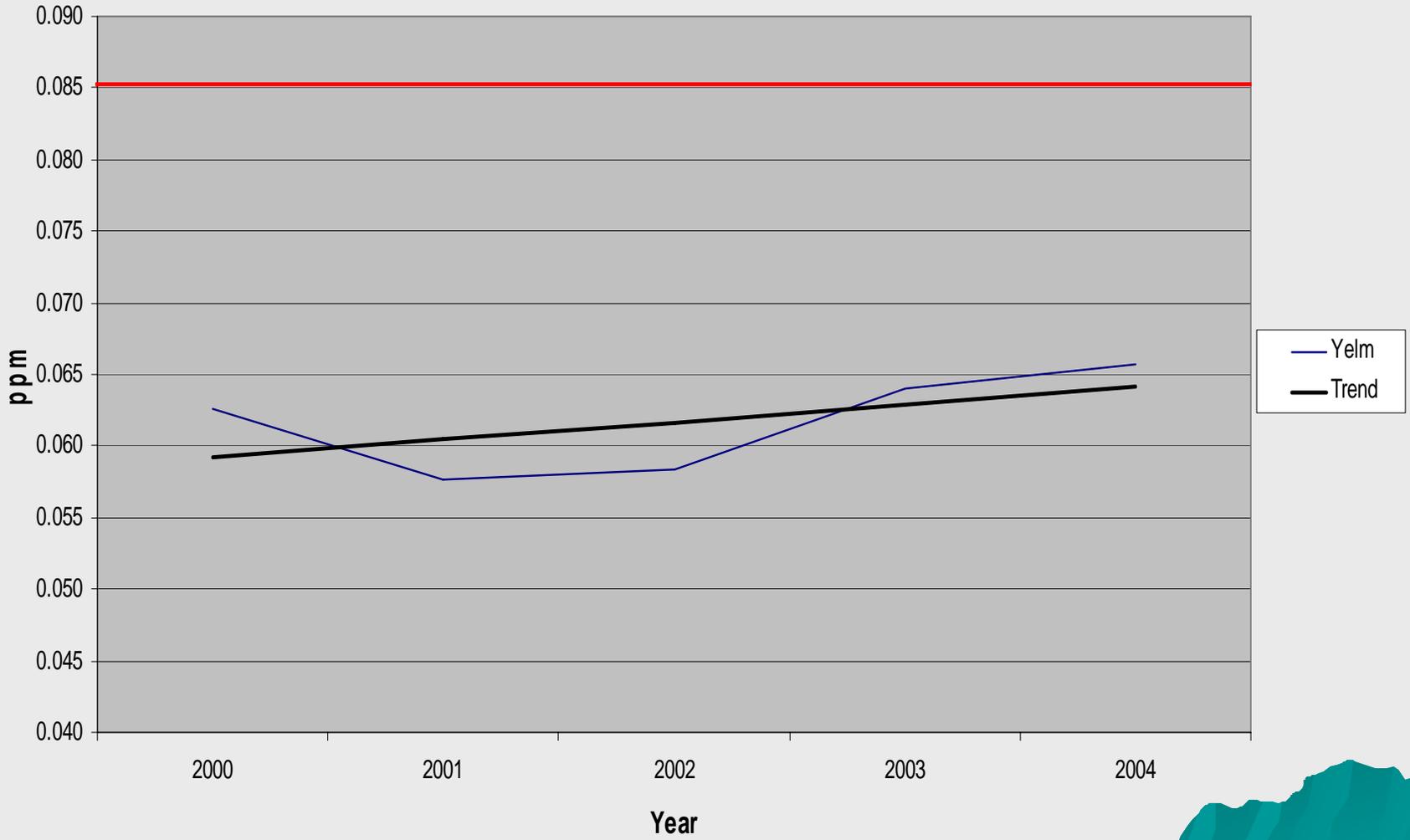
Mt. Rainier 8-Hour Ozone Design Values (2000-2004)



Pack Forest 8-Hour Ozone Design Values (1992-2004)



Yelm 8-Hour Ozone Design Values (2000-2004)



How likely is it that we will **violate** the 8-Hour NAAQS this year?

- ◆ Bottom line: Out of a total of 14 ozone sites, 9 moved slightly closer to violating the 8-hour standard and 5 sites moved further away during 2004.
- ◆ However, a violation of the 8-hour standard remains unlikely for 2005.
- ◆ We will likely have exceedances if the weather is hot.

Site	2003 Design Value	2004 Design Value
Vancouver	0.063	0.061
Lake Sammamish	0.057	0.060
North Bend	0.071	0.074
Enumclaw Mud Mtn.	0.071	0.073
Beacon Hill	0.044	0.046
Wishram	0.067	0.066
White Pass	Not enough data	0.067
Belfair	Not enough data	0.058
Mt. Rainier	0.072	0.069
Pack Forest	0.069	0.072
Cheney	0.065	0.063
Greenbluff	0.074	0.073
Yelm	0.064	0.066
Custer Loomis	0.053	0.057

Red indicates a move toward a violation of the 8-hour standard as a result of data collected during 2004

Site	2004 Trigger Value	2005 Trigger Value
Vancouver	0.128	0.130
Lake Sammamish	0.136	0.128
North Bend	0.108	0.101
Enumclaw	0.108	0.103
Beacon Hill	0.164	0.158
Wishram	0.122	0.120
White Pass	0.113	0.116
Belfair	0.137	0.137
Mt. Rainier	0.109	0.113
Pack Forest	0.111	0.108
Cheney	0.127	0.126
Greenbluff	0.105	0.107
Yelm	0.122	0.119
Custer Loomis	0.146	0.137

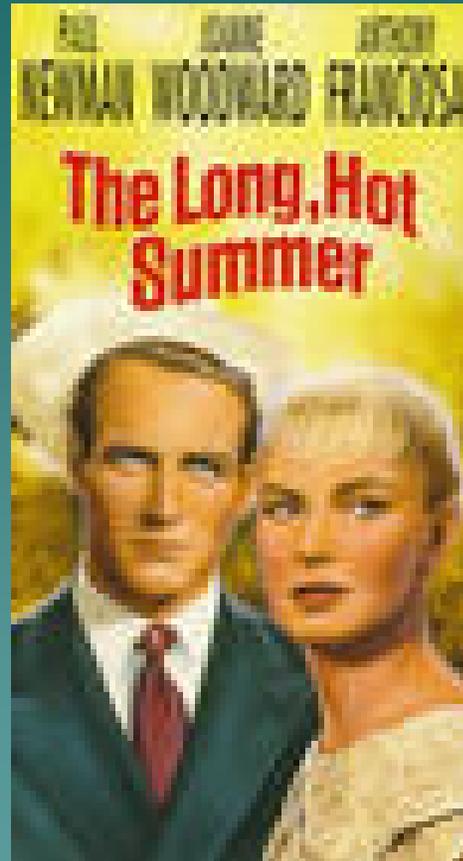
Red indicates a move toward a violation of the 8-hour standard as a result of the data collected during 2004 season

Has any Washington site recorded
an 8-hour 4th-High daily maximum
as high as .101 ppm since 1990?

No, but...



If we have a long hot summer...





How Close are we to a 1-hour NAAQS violation?

- ◆ In order to violate the 1 hour standard at any given site, four 1-hour daily max values of .125 ppm or greater would need to be recorded in 2005
- ◆ Bottom Line: very unlikely to violate the 1-hour standard; especially since 1-hour standard will be revoked in July 2005
- ◆ 1-hour exceedances are also unlikely

Take Aways

- ◆ It is unlikely that Washington will violate either the 8-hour or 1-hour standard during 2005
- ◆ Trends show mixed results in terms of where we are in relation to the NAAQS
- ◆ Just because we aren't in violation *doesn't* mean the air quality is good