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**Air Quality Management in Nonthaburi**  
**For Kitakyushu Initiative Seminar on Urban Air Quality**  
**Management**  
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**General information of Nonthaburi**

Nonthaburi municipality is located in the eastern side along the Chao Pra Ya river. The municipality consists of five Tambons, Suan Yai, Talad Kwan, Tha Sai, Bang Khen and Bang Kra Soh with total area 38.9 sq. km. The north is closed to Prak Kred municipality, the south and the east are closed to Bangkok and the west close to Chao PraYa river. At present, there are 270,091 populations with the average density of population 6,964 person/sq.km.

Mostly area in Nonthaburi municipality is lowland with natural rivers and canals that is suitable for plantation like a fruit orchard, especially for Durian which is the best quality in Thailand. As Nonthaburi municipality has the area close to Bangkok connect with many roads and express way so the people who live in Nonthaburi are able to work in Bangkok by round trip same as live in Bangkok. Such convenience, the agriculture area is replacing by industry and resident which shift from Bangkok. The consequence of the changing has high impact to air pollution situation not only from the traffic congestion in rush hour in the morning and after work but also from industries smokestack (wood product, food, chemical, metal and coating industry respectively)

## 2. Causes of Air Pollution

Air pollution in Nonthaburi Municipality area comes from many sources : The major sources are from vehicles, incinerators, constructions, and especially in industries . there are total 977 factories in Nonthaburi but 292 factories cause of the air pollutin.

The pollution control department had studied the air quality and reported the result as showed in table1-5

**Table 1** Sulfur Dioxide (SO<sub>2</sub>) 1-hr average (ppb) in 2000-2002 at Nonthaburi , compare with an ambient air standards of Thailand (1995)

year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
2000	130	NA.	52	83	56	73	50	56	63	20	27	36
2001	42	30	25	14	11	18	28	25	27	18	21	54
2002	32	21	26	22	27	26	30	25	33	46	18	NA.
STD	300	300	300	300	300	300	300	300	300	300	300	300

Source : Pollution control Department

From table 1, Sulfur Dioxide (SO<sub>2</sub>) at 1-hr average (ppb) in 2000-2002 is on standard .

**Table 2** Nitrogen Dioxide(NO<sub>2</sub>) 1-hr average (ppb) in 2000-2002 at Nonthaburi , compare with an ambient air standards of Thailand (1995)

year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
2000	NA.	NA.	99	134	93	NA.	64	82	99	69	77	120
2001	122	107	92	71	72	63	90	70	79	63	56	77
2002	77	72	65	83	73	52	39	63	59	92	85	NA.
STD	170	170	170	170	170	170	170	170	170	170	170	170

Source : Pollution control Department

From the table 2, Nitrogen Dioxide(NO<sub>2</sub>) at 1-hr average (ppb) in 2000-2002 is on standard .

**Table 3** Carbonmonoxide (CO) 1-hr average (ppb) in 2000-2002 at Nonthaburi , compare with an ambient air standards of Thailand (1995)

year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
2000	5	8	6.5	4.3	4.2	4.8	15.3	6.3	6.5	3.6	4.9	5.3
2001	7	8	5.2	3.8	4.5	4	8.9	4.8	5.1	4.6	5.7	7.5
2002	5.6	5.7	5.8	3.9	6.5	3.8	4.8	4.6	5.5	8.5	7.7	NA.
STD	30	30	30	30	30	30	30	30	30	30	30	30

Source : Pollution control Department

From the table 3, Carbonmonoxide (CO) at 1-hr average (ppb) in 2000-2002 is on standard .

Table 4 Ozone (O<sub>3</sub>) 1-hr average (ppb) in 2000-2002 at Nonthaburi , compare with an ambient air standards of Thailand (1995)

year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
2000	117	174	102	152	101	62	49	73	78	58	69	73
2001	100	122	88	94	78	61	69	74	77	73	89	97
2002	147	98	132	88	103	72	57	58	108	87	82	NA.
STD	100	100	100	100	100	100	100	100	100	100	100	100

Source : Pollution control Department

From the table 4, Ozone (O<sub>3</sub>) at 1-hr average (ppb) in 2000-2002 is off standard .

Table 5 Particulate matter (< 10 Micron) (PM-10) 1-hr average (ppb) in 2000-2002 at Nonthaburi , compare with an ambient air standards of Thailand (1995)

year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
2000	96.9	120.3	79	50.7	51.2	53.9	61.4	48	92	68.9	75.8	81.4
2001	59.8	67.9	132	29.5	NA.	65.8	57.5	51.7	68.3	71.1	113.4	154.1
2002	152	117	110	69.4	87	60	79.9	63.8	59.8	89.2	83.3	NA.
STD	120	120	120	120	120	120	120	120	120	120	120	120

Source : Pollution control Department

From table 5, Particulate matter (< 10 Micron) (PM-10) at 1-hr average (ppb) in 2000-2002 is off standard .

### 3. Air Quality Management Strategies and Policy

To promote the people participation to realize the value and benefit of natural resources and environment and learn to manage the environment by themselves. The strategies and policies to achieve are as follow:

- Environment Awareness programme
- Environment Monitoring and Preventing
- Environment recovering
- Environment research and studying

### 4. Activities

During 1998-2002 Nonthaburi municipality had set the plans, projects and activities concerning with air quality management as:

- 1) Seminar on *Green House Effect* for the administrators and officials level of local government in Nonthaburi. The participants come from 9 municipalities and others 120 local government offices.
- 2) Hold the activity *Vehicle Exhaust Checking Day* to checking the pollution from vehicles (public bus and private car) in nine municipalities in Nonthaburi area.
- 3) Promoting riding bicycle campaign to reducing air pollution and save energy.
- 4) Holding walking and running activity to save energy and healthy.

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- 5) Supporting ICLEI project (*Cities for Climate Change Protection Campaign*) to survey the energy consumption (electricity, petrol, LPG) in Nonthaburi municipality three years retroactive to estimate the green house effect gas produce by household and set the preventive scheme.
  - 6) Reducing the household waste by holding *the separating the waste* activity in school and community in municipality area.
  - 7) Air quality monthly measurement and monitoring cooperate with Pollution Control Dept.

#### **5.Conclusion**

The working result of the operation of air pollution control under the policies and strategies of the municipality according to the aims of environment preservation is highly successful .The result is well satisfy and very useful for solving the problems of air pollution. So we certified not only it has no air pollution problem in Nonthaburi but it becomes healthy cities as well.

Nonthaburi measure for APQC

Waste Recycling /Reduction

Trace Planning

Public Education

Conduct on Environment Inventory

Nont's CCP campaign

1. Conduct and Emission Inventory
2. Estimate on Emission Forecast
3. Set a concert reduction target and time table
4. Formulate and adopt a local action plane
5. Implement measure and report result

Climate Change Protection in Nonthaburi