

## TOWN OF CORTE MADERA

**SUBJECT:** STORM WATER AND WATER QUALITY MANAGEMENT POLICTY

**ACTION:** Original Approved by the Town Council, April 2, 1991

**DATES:** Amendment Approved by the Town Council, November 21, 2000  
Amendment Approved by the Town Council, October 16, 2001

THIS POLICY PROVIDES DIRECTION TO THE STAFF FOR THE OPERATION AND MAINTENANCE OF THE FOLLOWING WATERWAYS: LAGOON NO. 1, MARQUART LAGOON, PIXLEY LAGOON, EDGEWATER LAGOON, THE HIGH AND LOW CANALS, LAGOON A (BLACK KETTLE), SHOREBIRD MARSH, MARINA VILLAGE RETENTION POND, AND SAN CLEMENTE CREEK, UPSTREAM OF PARADISE DRIVE (COLLECTIVELY REFERRED TO HEREIN AS "VARIOUS WATERWAYS"), IN ORDER TO ECONOMICALLY AND EFFICIENTLY ACHIEVE HIGH ENVIRONMENTAL QUALITY AND MAXIMUM FLOOD CONTROL CAPABILITIES

### I. GENERAL

- A. The provisions of Corte Madera Municipal Code (CMMC) Chapter 2.32, Emergency Organization, may be invoked and shall take precedence over these Policies. In such case actions more conservative or different than those specified hereinafter may be needed to maintain public safety, to prevent flooding, or to protect public and/or private property.

In the absence of invocation of CMMC Chapter 2.32, procedures more conservative than those specified in this policy may be followed for flood control purposes if, in the opinion of Town officials, such procedures may be necessary to prevent flooding and/or for public safety.

- B. Generally, different operation procedures exist for "summer", "winter". The procedures and dates for each period vary depending on the water body. These procedures and dates are identified below in the sections particular to each water body.
- C. Daily macro (S. F. bay area) weather forecasts will be obtained from the National Weather Service. If information from the National Weather Service is unavailable, another weather report may be used at the discretion of Town officials.
- D. All elevations listed in this Policy are based on the National Geodetic Vertical Datum of 1929 (NGVD) 1929). The California State Land Commission brass disc 2363A, located on the west side of Hwy. 101 at the south end of the concrete sidewalk adjacent to the Corte Madera Creek overpass, was used as a benchmark to establish elevations.
- E. The accuracy of the Tesco level controllers will be checked twice a year (spring and fall) and calibrated if necessary.

The degree of accuracy of the controllers is +/- 0.2 feet (about 2-3/8 inches), therefore it should be expected that water levels controlled by these units will vary by this amount.

## **II – ENVIRONMENTAL**

### **A. WATER QUALITY**

Water quality shall be maintained by storm water flows, tidal action and/or action and/or periodic flushing of the Various Waterways. No chemical treatments shall be employed except where specifically approved in writing by the appropriate governmental agencies.

During summer, water samples will be collected from near the center of Lagoon No. 1 and Marquart Lagoon on a weekly basis, and sampled in accordance with Table 3-1 of the Regional Water Quality Control Board 1995 Basin Plan, or as recommended by CMSA and/or appropriate regulatory agencies. Appropriate regulatory authorities and the president of the adjacent Homeowners Association will be notified when results exceed limits specified on Table 3 – 1 (or other more current regulatory document). Immediate steps shall then be undertaken to restore water quality as quickly as possible.

## **III – MAINTENANCE**

- A. The Various Waterways shall receive semi-annual maintenance during the periods specified below, weather and other conditions permitting. The Town Public Works Superintendent shall create and maintain a checklist of required and optimal tasks that are to be completed during each semi-annual maintenance at each of the Various Waterways. The Public Works Director shall annually approve the checklist in writing.

### **B. OTHER MAINTENANCE**

This shall include periodic inspections and operations of the pumps and generators, periodic cleaning of screen and booms at pump entrances and all other required maintenance activities at the Various Waterways. The Town Public Works Superintendent shall create and maintain a checklist of all such periodic required activities which shall annually be approved by the Public Works Director in Writing. any repairs that these inspections or operations determine to be required shall be prioritized and completed in accordance with this prioritizations.

## IV-OPERATIONS

### A. LAGOON NO. 1, EDGEWATER LAGOON, AND THE LOW CANAL

NOTE: The Edgewater Lagoon, which has no pumps, and the Low Canal are connected directly to Lagoon No. 1, thus their water surface elevations are controlled by Lagoon No. 1 levels. Their elevation settings are not repeated hereinafter.

#### 1. ENVIRONMENTAL

##### a. Winter Season

During extended periods (one week or more) without rainfall, a tidal flush of the Lagoon should be performed every two weeks, weather permitting.

##### b. Summer Season

The Lagoon will be flushed weekly during the summer. The flush should start on Wednesday and allow one additional tidal cycle before beginning the fill. In general, "top off" can be accomplished by Friday. This flushing shall begin one week before spring maintenance (see below).

#### 2. MAINTENANCE

The Town will schedule two periods for planned flood control maintenance activities, one in the spring and one in the fall, weather permitting. The spring maintenance period will begin the *first Sunday in April* and continue through the next weekend. The fall maintenance period will begin the *third Sunday in October* and continue through the next weekend. During these periods, the Lagoon will remain low, weather permitting. At the end of these maintenance periods, the Lagoon will automatically be flushed, to the extent possible using existing gate controllers, four times over a two-day period, weather permitting, before being filled to the specified level. It is not intended that overtime will be expended for this purpose.

The Town may also need to perform maintenance at other times. For planned maintenance, the Town will notify the Lagoon Homeowners Association President one week in advance of these maintenance periods. However, emergencies may require shorter notice, or even no notice on occasion.

#### 3. OPERATING PROCEDURES

##### a. Winter Season

Winter season starts at the end of the Fall maintenance period and ends at the end of the spring maintenance period. During winter, whenever a one-day forecast predicts precipitation, the Lagoon elevations will be changed from High Winter Level to Low Winter Level. The Lagoon will remain at the Low Winter Level until a clear two-day forecast, at which time it will be raised back to the High Winter Level. These changes will be repeated throughout the Winter.

a. **Winter Levels:**

High Winter Level = -0.2 feet

Low Winter Level = -1.9 feet

Pump settings will be established by the Superintendent of Public Works to maintain the above stated levels as closely as possible without sacrificing the integrity of the pumps.

b. **Summer Season**

Summer season starts at the end of the Spring maintenance period and ends at the beginning of the Fall maintenance period.

Throughout the summer, the Lagoon will remain at the levels specified below and should not need to be adjusted based on the weather. Levels will change during maintenance periods (see Environmental, above).

(1) **Summer Level**

Summer Level = +0.1 feet

The setting is based on the elevation of the top of the lowest point of the lowest catch basin grate at the northeast corner of the intersection of Lakeside Drive and Mohawk Avenue. Over time as settlement occurs and/or as different catch basins become the lowest in the contributory system to this lagoon, this elevations may need to be reevaluated and the policies updated accordingly.

Pump settings will be established by the Superintendent of Public Works to maintain the above stated level.

## B. MARQUART LAGOON

### 1. ENVIRONMENTAL

#### a. Winter Season

During extended periods (one week or more) without rainfall, a tidal flush of the Lagoon will be performed every two weeks, weather permitting.

#### b. Summer Season

The Lagoon will be flushed weekly during the summer. The flush should start on Wednesday and allow one additional tidal cycle before being filled. In general, "top off" can be accomplished by Friday. This flushing shall begin one week before the spring maintenance (see below).

### 2. MAINTENANCE

The Town will schedule two periods for planned flood maintenance activities, one in the spring and one in the fall, weather permitting. The spring maintenance period will begin the *first Sunday in April* and continue through the next weekend. The fall maintenance period will begin the *third Sunday in October* and continue through the next weekend. During these periods, the Lagoon will remain low, weather permitting. At the end of these maintenance periods, the lagoon will automatically be flushed, to the extent possible using existing gate controllers, four times over a two-day period, weather permitting, before being filled to the specified level. It is not intended that overtime will be expended for this purpose.

The Town may also need to perform maintenance at other times. For planned maintenance, the Town will notify the Lagoon Homeowners Association President one week in advance of these maintenance periods. Emergencies may require shorter notice, or even no notice on occasion.

### 3. OPERATING PROCEDURES

#### a. Winter Season

Winter season starts at the end of the Fall maintenance period and ends at the end of the Spring maintenance period. During Winter, whenever a one-day forecast predicts precipitation, the Lagoon elevations will be changed from the High Winter Levels to the Low Winter Level. The Lagoon will remain at the Low Winter Level until a clear two-day forecast, at which time it will be raised back to the High Winter Level. These changes will be repeated throughout Winter.

**(1) Winter Levels:**

High Winter Level = -0.2 feet.

Low Winter Level = -1.2 feet.

Pump settings will be established by the Superintendent of Public Works to maintain the above stated levels as closely as possible without sacrificing the integrity of the pumps.

**b. Summer Season**

Summer season starts at the end of the Spring maintenance period and ends at the end of the Fall maintenance period.

Throughout the summer, the Lagoon will remain at the Level Specified below and should not need to be adjusted based on the weather. The Level will change during maintenance periods (see Maintenance, above) and during the weekly flush (see Environmental, above).

**(1) Summer Level**

Summer Level = +0.6 feet

The setting is based on the elevation of the lowest point of the lowest catch basin grate, adjacent to #6 Cheyenne Way, of the storm drainage piping system which flows into this lagoon. Over time as settlement occurs and/or as different catch basins become the lowest in the contributory system to this lagoon, this elevation may need to be reevaluated and the policies updated accordingly.

Pump setting will be established by the Superintendent of Public Works to maintain the above started level.

## C. THE HIGH CANAL

### 1. ENVIRONMENTAL

#### a. Winter Season

Operation is in accordance with environmental design and construction documents. Whenever Lagoon 1 and Marquart Lagoon are flushed (see Sections B and C), the High Canal is flushed.

#### b. Summer Season

The High Canal will be flushed weekly, on Tuesday. This flushing shall begin one week before spring maintenance (see below).

### 2. MAINTENANCE

The Town will schedule two periods for planned flood control maintenance activities, one in the spring and one in the fall, weather permitting. The spring maintenance period will begin the *first Sunday in April* and continue through the next weekend. The fall maintenance period will begin the *third Sunday in October* and continue through the next weekend. During these periods, the High Canal will remain low, weather permitting. At the end of these maintenance periods, the canal will automatically be flushed, to the extent possible using existing gate controllers, four times over a two-day period, weather permitting, before being filled to the specified level. It is not intended that overtime will be expended for this purpose.

The Town may also need to perform maintenance at other times.

### 3. OPERATING PROCEDURES

The High Canal Pump Station operation is in accordance with environmental, design and construction documents.

#### a. Winter Season

Winter season starts at the end of the Fall maintenance period and ends at the end of the Spring maintenance period. During Winter, the Canal level will be maintained as low as possible, at an approximate elevation range of -3.0 to -3.5 feet, except for periods when the Lagoons need to be filled. Gate and pump settings will be established by the Superintendent of Public Works to maintain the levels as closely as possible without sacrificing the integrity of the gates and pumps.

**b. Summer Season**

Summer season starts at the end of the Spring maintenance period and ends at the beginning of the Fall maintenance period.

**(1) Summer Level**

Throughout the summer, the Canal is used to maintain the various levels of the Lagoons and will normally range between elevation +1.0 and 2.0, except during periods of Lagoon flushing. The exact levels will be determined by the Superintendent of Public Works.

Pump settings will be established by the Superintendent of Public Works to maintain the above stated levels.

## D. PIXLEY LAGOON

Pixley Lagoon does not have pumps. Water level variations in the Lagoon are accomplished by lowering and raising of water level in the High Canal and by opening and closing the slide gate on the lowest discharge pipe from the Lagoon.

### 1. ENVIRONMENTAL

#### a. Winter Season

During extended periods (one week or more) when Pixley Lagoon remains at High Winter Levels, a tidal flush of the Lagoon should be performed every two weeks, weather permitting. When the Lagoon remains at Low Winter Levels for extended periods, a tidal flush should be performed every two weeks, weather permitting.

#### b. Summer Season

Pixley Lagoon should be flushed weekly during the summer. The flush will start on Tuesday with the High Canal. The flushing will begin one week before spring maintenance (see below).

### 2. MAINTENANCE

The Town will schedule two periods for planned flood control maintenance activities, one in the spring and one in the fall, weather permitting. The spring maintenance period will begin the *first Sunday in April* and continue through the next weekend. The fall maintenance period will begin the *third Sunday in October* and continue through the next weekend. During these periods, Pixley Lagoon will remain low, weather permitting. At the end of these maintenance periods, the lagoon will automatically be flushed, to the extent possible using existing gate controllers, four times over a two-day period, weather permitting, before being filled to the specified level. It is not intended that overtime will be expended for this purpose.

The Town may also need to perform maintenance at other times.

### 3. OPERATING PROCEDURES

#### a. Winter Season

Winter season starts at the end of the Fall maintenance period and ends at the end of the Spring maintenance period. During Winter, the slide gate on the lowest discharge pipe from the Lagoon will remain open. The water level will be maintained at the invert of this discharge pipe, or the water level in the High Canal, whichever is higher.

#### b. Summer Season

Summer season starts at the end of the Spring maintenance period and ends at the beginning of the Fall maintenance period. Throughout the summer, the slide gate on the lowest discharge pipe from Pixley Lagoon remains closed except during

flushing procedures. The water level in the Lagoon is maintained at the level of the High Canal or the invert elevation of the highest discharge pipe from Pixley lagoon, whichever is lower. Levels will change during maintenance periods (see Maintenance, above) and during the weekly flush (see Environmental, above).

**E. LAGOON A (BLACK KETTLE)**

**1. ENVIRONMENTAL**

**a. Winter Season**

The Lagoon will be flushed during high tide twice a month using the pumps, weather permitting.

**b. Summer Season**

The Lagoon will be flushed during high tide twice a month using the pumps.

**2. MAINTENANCE**

The Town will schedule two periods for planned flood control maintenance activities, one in the spring and one in the fall. These maintenance periods will be prioritized and scheduled annually, to accommodate other time-sensitive activities (e.g. Lagoon 1 and Marquart Lagoon maintenance). However, in lieu of other factors, the spring maintenance period will begin the *first Sunday in April* and continue through the next weekend. The fall maintenance period will begin the *third Sunday in October* and continue through the next weekend. At the end of these maintenance periods, operating procedures will be as outlined below.

The Town also may need to perform maintenance at other times.

**3. OPERATING PROCEDURES**

**a. Winter Season**

Winter season starts at the end of the Fall maintenance period and ends at the end of the Spring maintenance period.

During Winter, the Lagoon level will be maintained at a range of -2.5 to -3.0 feet.

**b. Summer Season**

Summer season starts at the end of the Spring maintenance period and ends at the beginning of the Fall maintenance period.

During Summer, the Lagoon will be maintained at a range of -1.5 to -2.0 feet.

F. SHOREBIRD MARSH

1. ENVIRONMENTAL

a. Winter Season

The Marsh receives no tidal flushing action when it is at Low Winter levels.

b. Summer Season

Shorebird Marsh is flushed with daily tidal action.

2. MAINTENANCE

The Town will schedule two periods for planned flood control maintenance activities, one in the spring and one in the fall. These maintenance periods will be prioritized and scheduled annually, to accommodate other time-sensitive activities (e.g. Lagoon One and Marquart Lagoon maintenance). However, in lieu of other factors, the spring maintenance period will begin the *first Sunday in April* and continue through the next weekend. The fall maintenance period will begin the *third Sunday in October* and continue through the next weekend. At the end of these maintenance periods, operating procedures will be as outlined below.

The Town also may need to perform maintenance at other times.

3. OPERATING PROCEDURES

Table 2-1 . Recommended Gate Operations

Operating Mode		Dates of Operation	Close-Gate elevation
Summer Mode			
	Breeding Season	April 1 – August 15	-0.5 NGVD
	Post-Fledging Season	August 15 – November 15	+1.0 ft NGVD
		<del>Beginning of the fall</del>	<del>maintenance period.</del>
Winter Mode			
	Low Winter	48 hrs before precipitation until a clear 48-hr forecast.	Pump down to -2.0 ft NGVD and allow discharge only
	High Winter	No precipitation forecasted	+0.75 ft NGVD

## G. MARINA VILLAGE RETENTION POND

NOTE: The following elevation and flushing data have been extracted from the 1995 Summation Report Marina Village Storm water Retention Pond, as approved by C.C. Fong, Chief, Regulatory Branch, S.F. District, Army Corps of Engineers.

### 1. ENVIRONMENTAL

Marina Village Retention Pond is operated in accordance with the Marina Village Storm water Retention Pond Replacement-vegetation and Monitoring Report approved by the Corps of Engineers on April 17, 1997.

### 2. MAINTENANCE

The Town will schedule two periods for planned flood control maintenance activities, one in the spring and one in the fall. These maintenance periods will be prioritized and scheduled annually, to accommodate other time-sensitive activities (e.g., Lagoon 1 and Marquart Lagoon maintenance). However, in lieu of other factors, the spring maintenance period will begin the *first Sunday in April* and continue through the next weekend. The fall maintenance period will begin the *third Sunday in October* and continue through the next weekend. At the end of these maintenance periods, operating procedures will be outlined below.

The Town also may need to perform maintenance at other times.

### 3. OPERATING PROCEDURES

#### a. Winter Season

Winter season starts at the end of the Fall maintenance period and ends at the end of the Spring maintenance period.

The flood control gate at Channel Drive will be closed to inflow from San Clemente Creek. Thus, most water entering the pond will be freshwater storm runoff. Accumulated runoff will be pumped down to maintain a water level range of -3.5 to -5.5 feet.

#### b. Summer Season

The Summer season starts at the end of the Spring maintenance period and ends at the beginning of the Fall maintenance period. However, the introduction of San Francisco Bay Water may be delayed until June 1 should May 1 salinity levels be less than 10 ppt.

The flood control gate at Channel Drive will be set to open each day to allow inflow from San Clemente Creek. The flow shall be monitored to raise the pond level to elevation -3.0 feet over a seven day period. It will then be pumped down to elevation -5.5 feet. Water entering the pond, having flowed across the Marina Village Marsh, will thus provide a muted tidal flushing with brackish water from the bay.

For the remainder of the Summer, the Lagoon will be maintained at an elevation range of -3.0 to -5.5 feet.

## H. SAN CLEMENTE CREEK PUMP STATION AND SLIDE GATE

NOTE: The following pertains to the portion of this channel upstream of the existing slide gate.

### 1. ENVIRONMENTAL

San Clemente Creek Pump Station and Slide Gate are operated in accordance with the environmental, design and construction documents, and all applicable permits.

### 2. MAINTENANCE

The Town will schedule two periods for planned flood control maintenance activities, one in the spring and one in the fall. These maintenance periods will be prioritized and scheduled annually, to accommodate other time-sensitive activities (e.g., those activities and Marquart Lagoon maintenance). However, in lieu of other factors, the spring maintenance period will begin the *first Sunday in April* and continue through the next weekend. The fall maintenance period will begin the *third Sunday in October* and continue through the next weekend. At the end of these maintenance periods, operating procedures will be as outlined below.

The Town may also need to perform maintenance at other times. For planned maintenance, the Town will notify the Meadowcreek and Madera del Presidio Homeowners Association Presidents one week in advance of these maintenance periods. Emergencies may require shorter notice, or even no notice on occasion.

### 3. OPERATING PROCEDURES

#### a. Winter Season

Winter season starts at the end of the Fall maintenance period and ends at the end of the Spring maintenance period.

During Winter, whenever a one-day forecast predicts precipitation, the Creek elevation will be changed from the High Winter Level to the Low Winter Level. The Creek will remain at the Low Winter Level until a clear two-day forecast, at which time the Lagoon will be raised back to the High Winter Level.

**A. Winter Levels:**

High Winter Level = +2.0 feet

Low Winter Level = +0.3 feet (maximum)

At High Winter Level the gate will be set to provide daily tidal action, with a maximum upstream water level of +2.0 feet.

At Low Winter Level the gate will be set to only allow water to flow out towards the Bay, lowering the upstream water level as much as the tides will permit.

In both Winter modes, the pump setting will be established by the Superintendent of Public Works to maintain the above stated levels as closely as possible without sacrificing the integrity of the pumps.

**b. Summer Season**

Summer Level = +2.0 feet

Summer season starts at the end of the Spring maintenance period and ends at the beginning of the Fall maintenance period.

Throughout the Summer, the gate will be set to provide daily tidal action with a maximum upstream water level of +2.0 feet. This level may change during various maintenance periods.

Pump settings will be established by the Superintendent of Public Works to maintain the above stated levels without sacrificing the integrity of the pumps.