INTRODUCTION

Huzhou City is located in northern Zhejiang Province. Understanding the origins of these place names can add meaning to these locations. For instance, Huzhou City can be broken down into ‘Hu’ (湖) which means lake and ‘zhou’ (州) which means city. Zhejiang can be broken down into ‘Zhe’ (浙) which was a word for the ancient meandering water system around the Qiantang River, ‘jiang’ (江) which means river in Chinese. Zhejiang Province was named after the name of the water system and Huzhou City is the only city named after Lake Tai in the Yangtze River Delta. Both the city and the province have had a close relationship with the water system from the beginning.

In traditional Chinese culture, people usually have a deep understanding of water and an emotional connection to water or waterways. Examples include the belief in ‘mother rivers’ and ‘river gods’. People also believe in river monsters which represent their fear of the water. There are many poems that describe the beauty and love of rivers. When discussing river systems it also involves the present era of urban development in China, where waterway systems are undergoing a contemporary rebirth. According to government scholars, there are five phases in the development of Chinese waterway system which are currently being adopted by Huzhou City: flood control waterway development (building dams), protective tree belt development (plant trees), natural ecological water bank development (establishing natural bank with native plants), waterfront parks/waterfront greenway development (building parks for recreation) and waterfront creative culture development (establishing genius loci).

For the waterways from Lake Tai to the downtown Huzhou City area, almost all of the banks/lakeshore areas are between phase two and phase three development as of April 2016. There is a great opportunity to implement the next three phases and to plan the future park system for the public to enjoy.

Since ancient times, Huzhou City has been known by many titles: as the 'Mansion of Silk'; the 'Land of Fish and Rice'; the 'State of Culture'; and has also had the title of honor — ‘The Pearl of South Lake Tai’. The city has over 2,300 years of history with a beautiful natural landscape and history-related heritage. There are 2,624,900 people currently living in the Huzhou region based upon the population census in 2013. With the gradual openness of the ‘One-child’ policy and the shift in population from farmers to urban dwellers, the urban population will grow fast and more people will live near the downtown area. The public’s needs will grow quickly. This site between the downtown area and the south shore of Lake Tai is the location for future urban development. Also, Lake Tai has seasonal pollution related to eutrophication due to sewage disposal from the nearby factories or daily disposal by locals. How to reduce the water pollution from the waterways and Lake Tai is a key issue that will also addressed in this thesis project.

A green connection, through the core of the city of Huzhou, China, is what I propose to do in my thesis project. My goal is to connect people with nature and the environment along the water system. In my thesis, I plan to present the overall planning for the waterway system from phase three to phase five based upon the five phases of development in urban waterway systems. The three phases should be instituted as part of a 20 year plan. Lastly, I will focus on the waterfront park design. The park design will be further designed to detail level in order to show the space utilization for further public recreation.
This thesis project - The Lake Tai Greenway Project site is located in Wuxing District, Huzhou City, Zhejiang Province, China.

The study area is 16.5 kilometer long riverfront, 500 meters width for each side. The river flows through the downtown of Wuxing District into Lake Tai. Three national major roads cut through this area, includes G50 connects Chongqing and Shanghai.

This area in Lake Tai Basin has a complex water system and provides local drinking water for most of cities in Lake Tai Basin, such as Shanghai, Suzhou, Hangzhou and Huzhou, etc.
INTRODUCTION

Wuxing District, Huzhou
Wuxing District is the central district of the prefecture-level city of Huzhou, Zhejiang, China.

Lake Tai
Lake Tai, the third largest freshwater lake in China.

San Francisco
San Francisco, officially the City and County of San Francisco, is the cultural, commercial, and financial center of Northern California and the only consolidated city-county in California.

San Francisco was founded on June 29, 1776, when colonists from Spain established Presidio of San Francisco.

City Comparison

<table>
<thead>
<tr>
<th>City</th>
<th>San Francisco</th>
<th>Wuxing District</th>
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<tbody>
<tr>
<td>Water Area</td>
<td>871 km² (336.9 mi²)</td>
<td>671.9 km² (260.5 mi²)</td>
</tr>
<tr>
<td>Land Area</td>
<td>1,000 km² (390 mi²)</td>
<td>876.6 km² (339.4 mi²)</td>
</tr>
</tbody>
</table>

Lake Tai
- Max. length: 87 km (54 mi)
- Max. width: 55 km (34 mi)
- Surface area: 2,250 km² (869 sq mi)
- Water depth: average 1.89 m (6 ft), maximum 2.6 m (8 ft)

San Francisco Bay
- Max. length: 97 km (60 mi)
- Max. width: 19 km (12 mi)
- Surface area: 2,250 km² (869 sq mi)
- Water depth: average 1.8 m (6 ft)

Lake Tai and Wuxing District

San Francisco Bay

Water Area Comparison

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<td>The northern average depth: 4.5<del>6 m (15</del>17 ft)</td>
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Wuxing District
- 871.9 km² (336.6 mi²)
**LEGEND**

- Residential
- Village
- Commercial
- Tourism
- Industry
- Civic Center
- School
- Sports Center
- Parks
- Industry Mixed Use
- Downtown Mixed Use
- Former Civic Center
- Farmland or N/A

**Lake Front/Riverbank**

TOURISM, RESIDENTIAL, VILLAGE, COMMERCIAL, FARMLAND

This part of the map mainly has the village land use, tourism and commercial use. The tourism including the landmark - Sheraton hotel, riverfront path, the Lake Tai Park. The commercial part including hotels, outlet.

The white part in the diagram mainly present the farmlands.

**Central Planning Area**

VILLAGE, RESIDENTIAL, INDUSTRY, CIVIC CENTER, FARMLAND

This part of the map mainly has villages and farmlands, also include some factories on the riverbank. The new civic center area (the blue gray part) had been moved from the old downtown area to the new downtown area. Almost the new urban developments will be surround or close to the new civic center area.

**Downtown**

INDUSTRY MIXED USE, DOWNTOWN MIXED USE, RESIDENTIAL

This part of the map mainly shows the density of the downtown residential and downtown commercial, also include some parks along the riverbank. Chen Banqiao Industrial District sits on the west of the downtown area. This area has had been highly developed.
INTRODUCTION

**case study / Emerald Necklace**

**Emerald Necklace by Frederick Law Olmsted**

**OVERVIEW**

The Emerald Necklace is a group of urban parks located in the center of Boston and is extended to Brookline. It was designed by Frederick Law Olmsted, America’s first Landscape Architect. It is linked by parkways and waterways. The Necklace comprises half of the City of Boston’s park acreage and parkland in the town of Brookline. It serves as the back yard and point of interest for both city dwellers and visitors. It provides green space for people to enjoy in the center of the city.

**HISTORY**

- **1870 Designed by Frederick Law Olmsted to connect parks known as the “great country park”**
- **1878 Clean up and control the marshy area**
- **1880 Olmsted proposed the Muddy River, which flowed from Jamaica Pond through the Fens**
- **In capital expenditures for parks and waterway improvement, included improved pathways, plantings and signage, bridge repairs, the restoration of boardwalks**
- **Several dedicated parks organizations still involved to protect, maintain, restore and advocate for the parks**

**CONNECTIVITY**

- Both are located within urban core through the city area
- Create a green corridor near the water bank
- Trying to connect the ponds, rivers, lakes and other water ecological system
- Provide walking path and recreation areas for publics
- Reduce the pollution problems for the urban environment
- Areas along riverside became the linear park
- Walking path along a gentle stream connects numerous small ponds
- Creates green corridor for City of Boston
- Offers an opportunity for recreation in a wooded environment within walking distance of urban core
- Provides wildlife habitat
- Improve the air quality of the city
**Wuxi Taihu New City** by Tom Leader Studio

**Location**  
Wuxi, Jiangsu Province, China

**Size**  
1,200 acres (4.45 km²)

**Type**  
Greenway Planning

**OVERVIEW**
This project of 500 hectares is located on the same lake, Tai, as my project. It is on the north shore of the lake and my project will be on the south shore of the Lake Tai Basin. This project is a new form of city planning which attempts to connect the city with its waterfront and create an open space network with programming for the local city people. The goal of this project was to enhance the quality of life for the people living in the surrounding area which is one of the most crowded areas in the region and has over 50 million residents.

**HISTORY**

2002: Prepare Lake Tai New Town Planning
2007: Start construction to build a road system, renovate the water system
2011: Start construction of civic center, convention center, art center, commercial center, etc.
Later: Parks, protective forest surrounding Lake Tai, wetland restoration

**COMPARISON**
- Similar location, one is in the north shore of Lake Tai. Proposed site is in the south shore of Lake Tai
- Development from the the waterfront to connect downtown area
- Similar Scale
- Connect the green space and improve the ecological system

**DESIGN STRATEGY**
- Plan a new town for future population growth
- Connects various centers by the green corridor
- Enhance the biodiversity of the ecological system
- Extends the old downtown area
Three Sovereigns and Five Emperors Period, people started to live in this area.

2852BC - 2070BC
Guocheng County was set up by the State of Chu.

248BC
Kingdom of Wu, set Wuxing Shire, its administrative area including the modern Huzhou prefecture city and Hangzhou, Zhejiang.

222BC
Qin Dynasty, Wucheng County was set up.

266
During the Tang Dynasty (618-907), Huzhou administered 5 counties: Wucheng, Wukang, Changxing, Anji, and Deqing.

602
Sui dynasty changed the name of Wuxing to Huzhou.

During the Tang Dynasty (618-907), Huzhou administered 5 counties: Wucheng, Wukang, Changxing, Anji, and Deqing.

During the Qing Dynasty (1644-1917), Huzhou administered 7 counties: Wucheng, Guo’an, Wukang, Deqing, Changxing, Anji, and Xiaofeng.

602

1949
the People’s Republic of China, Huzhou town became the seat of government of the First Special District of Zhejiang, administrative area including the modern Huzhou and Jiaxing prefecture cities.

1983
Huzhou prefecture level city was set up.

Map of Huzhou County in Ming Dynasty (1368-1644)

Map of Huzhou County in Qing Dynasty (1644-1917)

Map of Huzhou County in 1936

The map shows the waterway system in Huzhou during Ming Dynasty. The Tiaoxi Brook and The East Tiaoxi Brook still exist but many other rivers and brooks were filled during the development.
The Map is showing the downtown of Huzhou City was surrounded by integration zones as other developing cities. These integration zones mainly have low density of buildings, farmlands, new developed tourism area and industrial factories. The integration zone broken the connection between downtown and tourism area.

The project area will start at the riverfront of existing sub-tourism area and end at the meet place of integration zone and downtown area. The connection between Renhuang New Town and the downtown area also needs to be improve.
SITE ANALYSIS

existing condition

- Tuying Wetland
- Road
- Lake Tai
- Sheraton Hotel
- Renhuang Mountain
- Road
- Paddy Field
- Farm Land
- Long Island Park
- Commercial
- Shopping Center
- King Xiang’s Park
- Residential
- Riverside Park
- Residential

MAIN FOCUS OF PROJECT

500 1000m

0° 1° 2° 3° 4° 5°
**A Poetic Urban Balance | Lake Tai Greenway**

**MAIN FOCUS OF PROJECT**

- **Lotus Manor**
  - 18.5 acre
  - Heritage of Traditional Chinese Building
  - Zoo
  - Children's Playground

- **Phoenix Park**
  - Symblic Phoenix Sculpture
  - Tennis Court
  - Children's Playground

- **King Xiang's Park**
  - History education wall
  - Memorial gate
  - Tourism Pier

- **Renhuang Mountain Tourism Area**
  - 803 acre
  - Hiking Trail
  - Scenic Lookout

- **Long Island Park**
  - 45 acre
  - Seasonal Flower Show
  - Retail
  - Restaurant
  - Bicycle Trail

- **Lotus Manor**
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**SITE ANALYSIS**

existing open space / parks
The attractions map shows landmarks, shopping center, parks, hotels, museums, library, cinemas, community centers, etc.

This map also represents locations of the most people’s activities. There is almost no attraction for public in the Central Planning area.
HIGHWAY MAP - There are two major highways through the proposed site in Huzhou City.

HIGHWAY + ROAD MAP - Main road systems been built though the downtown area and the new downtown area. There is only one road, the Lake Tai Circle Road that connects Lakefront/riverbank area and the downtown area.

HIGHWAY + ROAD + STREET MAP - This diagram show the density of the street system through downtown area. Heavy traffic become an issue during the weekdays and the national holidays.
The West Tiaoxi Brook, the East Tiaoxi Brook, the Xiayou Reservoirs, the Shuanglin Reservoirs and the Si’an Reservoirs flow through Huzhou City. The water system connecting the upper stream of East Tiaoxi Brook at south part and flowing through the Shanghai-Huzhou channel known as the ‘Rhine of China’. The Lake Tai connects the north part of the water system. In the east part, the water system also connects the Grand Canal and the Huangpu River in Shanghai. The density of the water system likes the web of spider in this land. All these comprised the Yangtze River Delta. The network of water system and other ponds densely covered this area. There are 149 reservoirs that each has ability of store over 100 thousand cubes of water in mountainous area.
The blue section shows a typical section of existing lakefront.

The green section shows the typical section in the central planning area comprised mainly of villages and farmlands.

The pink section shows the residential area besides the river and the Long Island Park in this area from the downtown part.

The yellow section shows the downtown on the left side and the residential area in the right side.
**SITE ANALYSIS**

**Landscape Architecture | MFA Thesis | Yuening Pu**

### TEMPERATURE

**Spring**
- Temperature: 45°F–55°F

**Summer**
- Temperature: 70°F–92°F

**Autumn**
- Temperature: 68°F–82°F

**Winter**
- Temperature: 41°F–53°F

**PRECIPITATION**
- 761 - 1708 mm per year
- 116 - 156 days per year

**HUMIDITY**
- 80%

### WATER POLLUTION

**Eutrophication**
- Major Pollutant: Nitrogen, Phosphorus
- No drinkable level water in the downtown area.

**Related Article (see Appendix):**

**Eutrophication**

- 1983 - 40%
- 1987 - 1%

**Organic pollution at the water surface**
- 1996 - 83%
- 1994 - 29.18%

### AIR POLLUTION

**Huzhou Air Quality**
- GOOD

(pollution seriousness: green to red, low to high)

**Major Pollutant**

<table>
<thead>
<tr>
<th>PM2.5</th>
<th>PM10</th>
<th>SO2</th>
<th>NO2</th>
<th>CO</th>
<th>O3</th>
</tr>
</thead>
<tbody>
<tr>
<td>38µg/m³</td>
<td>56µg/m³</td>
<td>17µg/m³</td>
<td>16µg/m³</td>
<td>-</td>
<td>111µg/m³</td>
</tr>
</tbody>
</table>

**PM2.5** - The term fine particles, or particulate matter 2.5, refers to tiny particles or droplets in the air that are two and one half microns or less in width. Like inches, meters and miles, a micron is a unit of measurement for distance.

**PM10** - The big particles are between 2.5 and 10 micrometers (from about 25 to 100 times thinner than a human hair).

**Air Quality Analysis:** Except for especially sensitive people, there is no harm to body. Tips: Quality is good, except extremely sensitive people, other people can have common outdoor activities.

Source: [https://www.health.ny.gov/environmental/indoors/air/pmq_a.htm](https://www.health.ny.gov/environmental/indoors/air/pmq_a.htm)
### PLANTS
- Bamboo
- Pine
- Cedar
- Tea Tree
- Mulberry
- Locust
- Gingko
- Camphor
- Willow
- Elaeocarpus

### ANIMALS
- Yangtze Alligator
- Panda
- Sika Deer
- Blanquillo
- Whitebait

### Biodiversity / Programming
- Hundred Leaf Dragon - National Intangible Cultural Heritage
- San He Wind Defend Festival
- National Extreme Sports Events - Every two years
- Huzhou Folk Art Form - Lute Story Telling
SITE ANALYSIS

USER PROFILE

LOCAL PEOPLE

SENIOR

CHILD

POTENTIAL USER OF LAKE TAI GREENWAY

TOURIST

Population

- Wuxing District: 459,300
- Huzhou City: 2,624,900

- 1,284,200 (49.6%)
- 1,320,700 (50.4%)
- 929,000 (3.7%)
- 1,695,900

More and more people move from suburb to city.

Age Distribution

- <18 years old: 367,800 (14%)
- 18-35 years old: 578,000 (22%)
- 35-60 years old: 1,221,800 (43%)
- >60 years old: 552,400 (21%)

- 367,800 (14%)
- 578,000 (22%)
- 1,221,800 (43%)
- 552,400 (21%)

21% and more old population needs safety space with better air quality.

Child population will increase because of the opening of ‘One Child’ policy.

Tourist Number

- 2014 National Golden Week: 3,554,410 (241%)

Tourist nodes

- Lake Tai Tourism Area, Lotus Garden, Museum of Ancient Wood, Museum of Writing Brush, Feiying Tower, Renhuang Mountain Tourism Area, Tuying Wetland, Traditional Food Tour, Gucheng History Museum, etc.

Tourist award

- National Eco-friendly Tourism Model City awarded by National Environmental Protection Bureau since 2006

Source: http://baike.baidu.com/view/7461.htm

SENIOR

Child

LOCAL PEOPLE

POTENTIAL USER

1. Local people (Urban dwellers and rural dwellers)

Local people includes the urban dwellers who live in the downtown area and rural dwellers who live in the village and who need outdoor space for a variety of activities. There are no large open spaces in the Downtown area and no well designed country park either in the Central Planning area or the Lakefront/Riverbank area. For the future development, these space along the Xiaomei Port River from the Central Planning Area to the Lakefront/Riverbank Area need be saved for a variety of outdoor activities.

Senior

Based on the census in 2013, the population of seniors has increased and has the trend of increasing in future. Activity space and living space for seniors needs to be planned in the project. Compared to the downtown area, the Central Planning Area and the Lakefront/Riverbank Area have a potential for a better environment for seniors. Eco-friendly living circles, senior community centers will provide a better quality of life for seniors.

Child

The abolishment of the ‘One Child’ policy will increase the population of children in the future. For now, there is no outdoor classroom for education in Wuxing District, Huzhou. The only resource for after-school education is the Youth Center. Children need to spend more time outdoor to know the world instead of only staying in the classroom or playing with mobile devices. More outdoor classes, outdoor trainings and field trips will provide the new balance between traditional education and creative study for child.

2. Tourist

The remarkable scenery of Lake Tai attracts tourists to Huzhou. Enhancing the connection between the Lake Tai Tourism Area and the Downtown Area will benefit to the economic development in Huzhou. A better organized series of spaces along the waterway system to create a tourist route from the Downtown to Lake Tai will not only bring tourists a memorable journey but will also give deeper understanding of Huzhou's rich history and culture. The tourists need more activities besides enjoying the view of Lake Tai. More diverse activities like hiking, boating, picnicing and other special events may attract the tourists in the nearby cities to visit Huzhou more frequently.
OPPORTUNITIES

1. The rich culture in Huzhou City (Calligraphy Brush Culture, Silk Culture, Tea Culture)
2. The low density areas lands in Central Planning Area
3. Space for future population growth
4. The connected waterway system in the Yangtze River Delta
5. Variety of plants and animal resource
6. Yearly national event in Huzhou City
7. Tourism activities
8. Major freeway and national roads through the site

CONSTRAINTS

1. The water pollution in rivers, canals and lakes related to eutrophication
2. The balance between farm land needs and the space for future development
3. The existing or leftover industrial sites
4. The heavily developed space in downtown area
5. The preservation of historic elements and culture for Huzhou

GOALS

1. Reduce water pollution
2. Improve air quality
3. Enhance connection between downtown Huzhou and water edge of Lake Tai
4. Restore natural water ecology
5. Create healthy senior community
6. Provide educational outdoor spaces
7. Remind people of Huzhou City history
8. Preserve valuable village and farm
WATER CONNECTS EVERYTHING

Emphasis on connecting the downtown and tourist areas, reconnecting the different districts in the downtown, creating and connecting the green space in the Downtown and the Central Planning Area. Recreate the traditional relationship with water that existed in Huzhou for centuries. Recreate a water transportation system that can be traced back several centuries but since the 1950s, has not been used. Using the new transportation system -- water bus, to provide people new experience of city transportation. This also can reduce some traffic jam in downtown. Interactive riverside and local backyard are the subconcepts.

Interactive Riverside

Sight seeing, Education of water system, walking into the water, water wed-
ding, water dining, etc.

Local Backyard

Water Connects Everything

Technology Museum, sports with technology, technology combine with historic industry near the site (concrete factory, fluorescent factory, etc.)

Urban farm, urban garden, eco-recreation, eco-residential, etc.

Image Source: Google Images
The site is located along the Xiaomei Port River from the Lake Tai shoreline to the Huancheng River in the Downtown Area of Wuxing District, Huzhou City. The project will emphasize and will increase the connection between the Downtown Area and the Lakefront/Riverbank Area, enhancing the connection between other districts through the waterway systems. Another benefit of this project will influence the future development of the region and help decentralize the dense downtown area.

The first goal of The Lake Tai Greenway project is to create an ecological urban space for the future population of Huzhou City and increasing tourism needs. The downtown area is becoming more and more dense. This project is an opportunity to reduce the density in the Downtown Area by developing a green corridor and develop the surrounding areas. Introducing the waterway transportation system also can reduce the heavy traffic in the Downtown Area. It is also great for stable development of this urban area. In the future, the Lake Tai Greenway project will play a significant role in influencing the future development expanding from the old downtown zone.

The Central Planning Area is suburban area with farm lands, and industrial factories, such as a concrete company and a fluorescent chemical factory. The factories and agricultural irrigation produce pollutants which are discharged into the lake. It is a pivotal spot to reduce the pollution and getting clean water for both the overall ecosystem and human needs. This will also reduce seasonal water pollution and improve air quality which is the second goal of this project.

Last but not least, The Lake Tai Greenway project will remind people of the rich history of the Huzhou area by improving and developing the Lakefront/Riverbank Area. Based on the five phases of riverfront development, this project will focus on the Natural Ecological Water Bank Development, Waterfront Parks and Waterfront Greenway Development and Waterfront Creative Culture Development. The project will emphasize the education district, the technology district, the urban farming area, eco-residential area for seniors, downtown waterway transportation, etc.

1 Lake front/Riverbank becomes Creative Lakefront/Riverbank
2 Central Planning Area becomes Ecological Urban Development
3 Downtown becomes a Cohesive Blend of the Old and New

These are the two options for further study that I was considering.

Option 1:
- Restore and develop riverbank in the Central Planning Area
- Consider elements that connect to all different areas in Huzhou but emphasize on the connection as the existing Downtown area and proposed Central Planning Area

Option 2:
- Restore and develop lakefront/riverbank
- Consider elements related to Creative Lakefront/Riverbank to provide new tourism and local parks for users which is different from the existing Lake Tai tourism area activities.
This location of the proposed Central Planning Area is convenient to reach downtown, civic center and east new town.

Create a new development band to reach the lakefront from downtown.

Provide better environment for seniors and children. Emphasize the design on safety and walkability.
PLANNING
conceptual planning

water + agriculture + living

There are three parts of this project which are phase one - master plan, phase two - site plan and phase three - site design.
PLANNING

phase one - master plan / proposed land use

GREEN SPACE
- PLAZA
- POCKET PARK
- COMMUNITY GARDEN
- URBAN FRAM PARK
- BOTANICAL GARDEN
- VILLAGE PARK
- WETLAND
- NATURE RESTORATION

AGRICULTURE
- FARM
- LANDSCAPE FARM
- AQUACULTURE

COMMERCIAL
- RETAIL
- OFFICE
- HOTEL
- CINEMA

RESIDENTIAL
- LOW DENSITY
- MODERATE DENSITY
- MEDIUM DENSITY
- HIGH DENSITY

MIXED USE
- LIVE & WORK
- RETAIL & RESIDENTIAL

PUBLIC SPACE
- SCHOOL
- HOSPITAL
- EDUCATION CENTER
- COMMUNITY CENTER
- SENIOR CENTER
- MUSEUM
- LIBRARY
- MARINA

INDUSTRIAL
PLAZA
POCKET PARK
COMMUNITY GARDEN
URBAN FRAM
PARK
BOTANICAL GARDEN
VILLAGE PARK
MIXED LAND
NATURE RESTORATION

BUS
SHUTTLE
WATER BUS/TAXI
WATER
TRANSPORTATION STOP

PLANNING
phase one - master plan / diagrams

TRANSPORTATION
GREEN SPACE
FARM
PLANNING
phase two - site plan / land use

Scale comparison with Mission Bay Plan in San Francisco
**GREEN SPACE SYSTEM**

Variety of green spaces not only creates different space for people but also connects ecology systems for plants and wildlifes. Seven types of green space includes urban parks for all users, wetland for water treatment, nature restoration for restore nature and educational purpose, community garden for families to grow their own plants, pocket park/ plaza for create a greener urban city and rural park for renovate and preserve existing villages. In addition, a small piece of farmland will be keep for educational purpose and becomes a reminder of the history of this site.

**WATER SYSTEM**

The proposed water system connects fragmentary but valuable ponds into a whole water system. The connected water system will flow from the east ponds area into Xiaomei Port River and flow into Lake Tai eventually.

Before water flows into Xiaomei Port River, water flows into several retention ponds or wetland treatment to reduce water pollutions.

**BUILDINGS**

Most of the buildings will be between 1-3 stories and 4-10 stories. Buildings will be lower in close to waterfront area. Only some iconic buildings in the core area will be higher then 15 stories.
MAJOR CIRCULATION
Major throughfare connecting north and south to enhance the connectivity between downtown area and lake front area. Throughfare with bridges connecting the Ease New Town Development and west side for Civic Center and existing villages.

BIKE + PEDSTRIAN
Most of the major roads provide bike lanes for bikes and electrically operated motorcycles. These lanes separate from vehicular traffic by planting area (also are bioswales) to create a safer riding zone. The major path in waterfront park also provides bike lane with incredible waterfront views.
Not only on the normal sidewalk serve as pedestrian path but also create City Stream Walk which provides pedestrians a way to get more close to water. Sidewalks, City Stream Walk, alleys inside blocks consists a more walkable pedestrian system.

NODES
More attractions inside smaller blocks provides a more convenient living for senior and children. Senior day-care center, community centers, education center located different area of the town provides residences a place to take care of senior and children nearby their houses.
PLANNING
phase two - site plan / street system

- Metasequoia glyptostroboides (Dawn Redwood)
- Cinnamomum camphora (Camphora Tree)
- Prunus serrulata (Japanese Flowering Tree)

PARKWAY

- Parkway
- Throughfare
- Boulevard
- Commercial Street
- Street
- Residential Street
- Village Street

PHASE THREE

STREET TREE SELECTION

- Metasequoia glyptostroboides (Dawn Redwood)
- Cinnamomum camphora (Camphora Tree)
- Prunus serrulata (Japanese Flowering Tree)
STREET TREE SELECTION

Ginkgo biloba
Ginkgo

Osmanthus fragrans
Sweet Osmanthus

Zelkova serrata
Japanese Zelkove

Prunus serrulata
Japanese Flowering Tree
phase two - site plan / green space system

URBAN PARK

CITY STREAM GREEN SPACE
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- Treatment Wetland
- Nature Restoration
- Plaza / Pocket Park
- Village Park
PLANNING
phase two - site plan / conceptual montages and sections

MASTER PLAN

Pedestrian Bridge  Tree Battle Formation  Entrance Gathering Plaza  Outdoor Dining Plaza  Outlook Deck

Flood Water Level  Normal Water Level  Pier  Wetland  Farmer's Market + Dining

[Diagram showing planned outdoor spaces and elements]
Key Map

1. Event Lawn
2. Outdoor Dining Area
3. Crosswalk Bridge
4. Stepping Stone
5. Pathway
6. Weir
7. Guiding Paving
8. Wood Deck
9. Local Brick Paving
phase three - site design
existing conditions
site plan
study process
diagrams
enlargements
sections
perspective
wildlife habitat
planting zone
phase three - site design / existing conditions

Village

Transportation Wharf

Wetland

Water Edge

SITE

HUXUE ROAD

0 25 50 100 200m

900M / 2950 FT

150M / 490 FT
GREENWAY PARK DESIGN
phase three - site design / existing analysis

EXISTING CIRCULATION
EXISTING WATER SYSTEM - Fragmented
GREENWAY PARK DESIGN
phase three - site design / study process

CLAY MODEL STUDY

CIRCULATION STUDY PROCESS

final
In Tang Dynasty, poet Zhihe Zhang visited Huzhou and he wrote -- Egrets fly in front of Mount Xishai, peach blossoms fall and many mandarin fish swim. The poet is fishing and wears a straw cape and hat. He enjoyed the breeze and tiny rains so much that he forgot to go home.

It is a wonderful poem that describes the weather, people, activity, wildlife and the natural environment of the past. Thinking about people’s urban life now, it is difficult to feel the same wonderful mood as the poet did. This park design proposal is trying to create the same poetic feelings and experiences of the natural environment for the local people. Some of the elements mentioned in the poem transfer to the basic principles of the park’s design: ecology, activity and poetic living.
GREENWAY PARK DESIGN
phase three - site design / diagrams

CIRCULATION

ATTRACTIONS

Aquatic Garden
Submerged Education
Overlook
Community Farm
Education Farm
Paddy Walk
Meditation Garden
Floating Island / Bird Watching

Reed Walk
Green Roof Overlook
Renovated Village
Community Farm
Community Farm

Existing Long Island Park
Cafe/ Bike Rental
The Great Lawn
Kayak
Connecting Bridge

Floating Deck
Floating Deck
Floating Deck
GREENWAY PARK DESIGN
phase three - site design / view towards Lake Tai

BEFORE

AFTER
phase three - site design / enlargement

- THE GREAT LAWN
- KAYAK
- WATER PROMENADE
- EDIBLE LANDSCAPE
- RAIN GARDEN
- CAFE / BIKE RENTAL (UNDER THE BRIDGE)
- FLOATING WOOD DECK
- XIAOMEI PORT RIVER
- SOUTHLAKE BRIDGE
- CONNECTING BRIDGE
- LONG ISLAND PARK
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phase three - site design / reference images
GREENWAY PARK DESIGN
phase three - site design / enlargement
PLANTING STRATEGY

- **Cynodon dactylon**
  - Scutch Grass

- **Zephyranthes candida**
  - White Windflower

- **Oxalis corymbosa**
  - Common Wood Sorrel

- **Plantain lilies**
  - Hostas

- **Koelreuteria bipinnata**
  - Goldenrain Tree

- **Citrus medica**
  - Citron

- **Cinnamomum camphora**
  - Camphor Tree

- **Ginkgo biloba**
  - Ginkgo
PLANTING STRATEGY

**Phragmites communis**
Common Reed

**Typha orientalis**
Bulrush

**Pontederia cordata**
Pickerel Weed

**Canna indica**
Canna Edulis

**Ligustrum japonicum**
Goldren Ligustrum

**Gardenia jasminoides**
Cape Jasmine

**Ginkgo biloba**
Ginkgo

**Lagerstroemia indica**
Crepe myrtle

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100 Years Flood Level 6.00
10 Years Flood Level 3.44

**Section Key Map**

**GREENWAY PARK DESIGN**

**phase three - site design / section**

**Wetland Island**
(Bird Habitat)

**Tidal Wetland**

**Healing Garden**

**Upper Promenade**
(Levee)
GREENWAY PARK DESIGN
phase three - site design / view towards Downtown

BEFORE

AFTER

Metasequoia glyptostroboides  
Dawn Redwood

Glyptostrobus pensilis  
Chinese Swamp Cypress

Taxodium ascendens  
Pond Cypress

Taxodium distichum  
Bald Cypress

Picea koraiensis  
Korean Spruce

Orychophragmus violaceus  
Chinese Violet Cress

Zizania latifolia  
Manchurian Wildrice

Vallisneria natans  
Eelgrass

PLANTING STRATEGY

Aquatic Forest
Retention Pond
Purification Island
View from boardwalk look back to the Reed Walk
Underwater Glass Bridge Reference

Glass Bridge

Submerged Plant Observation

Aquatic Forest

Aquatic Garden

Wood Boardwalk

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GREENWAY PARK DESIGN
phase three - site design / overall sections

Section Key Map

A - Edible landscape

B

Floating Wood Deck

100 Years Flood Level 5.00
10 Years Flood Level 3.44

Edible Landscape

C

Aquatic Forest

Forest Walk

Upper Promenade (Levee)

100 Years Flood Level 5.00
10 Years Flood Level 3.44
ZONE 1 - BIRD

ZONE 2 - MAMMAL

ZONE 3 - ZOOBENTHOS - FISH - AMPHIBIAN

Kingfisher
Magpie
Egret
Red-crowned Crane

Rabbit
Hedgehog

Weever
Mandarin fish
Crucian
Silver carp
Black carp

Spiral shell
Clam
River crab
Pelican
Wild duck
Frog
Toad
**TREE**

*Ginkgo biloba*

- Evergreen
- 60 to 80m

*Pruus serrulata*

- Japanese Flowering Tree
- Deciduous
- 8 to 12m
- Flower: Mar-May

*Magnolia denudata*

- Yulan magnolia
- Deciduous
- Up to 25m

*Prunus serrulata*

- Japanese Flowering Tree
- Deciduous
- 8 to 12m
- Flower: Mar-May

*Magnolia x soulangiana*

- Chinese magnolia
- Deciduous
- Up to 10m

**SHRUB**

*Loropetalum chinense*

- Chinese fringe flower
- Evergreen
- 1 to 5m

*Rhododendron simii*

- Sims Azalea
- Evergreen
- 1 to 3m

**GROUND COVER**

*Leopard plant*

- Perennial
- Flower up to 70cm
- Flower: Aug-Mar

*Farfugium japonicum*

- Common wood sorrel
- Perennial
- 10 to 40cm
- Flower: Mar-Dec

*Oxalis corymbosa*

- Daylily
- Perennial
- 30 to 60cm
- Flower: May-Jul

*Hydrangea macrophylla*

- French hydrangea
- Deciduous
- 1 to 4m

*Hibiscus syriacus*

- Common hibiscus
- Deciduous
- 3 to 4m

*Jasminum sambac*

- Arabian jasmine
- Evergreen
- Up to 3m

*Common Hibiscus*

- Evergreen
- 3 to 4m

*Hibiscus syriacus*

- Common hibiscus
- Deciduous
- 3 to 4m

Metasequoia glyptostroboides  
Dran Redwood  
/ deciduous / riparian  
/ 12-18m

Cryptomeria japonica  
Japanese cedar  
/ deciduous / riparian  
/ up to 40m

Glyptostrobus pensilis  
Chinese swamp cypress  
/ deciduous / riparian  
/ 8-10m rarely up to 25m

Pinus elliottii  
Slash pine  
/ deciduous / riparian  
/ up to 30m

Taxodium distichum  
Bald Cypress  
/ deciduous / riparian  
/ 25-30m

Taxodium ascendens  
Pond Cypress  
/ deciduous / riparian  
/ up to 25m

Picea koraiensis  
Korean Spruce  
/ evergreen / riparian  
/ up to 30m

Phalaris arundinacea  
Ribbon grass  
/ perennial  
/ 1.3m

Hostas  
/ perennial  
/ 14-24cm  
/ flower - Aug~Oct

Orychophragmus violaceus  
Daylily  
/ perennial  
/ 30 to 60cm  
/ flower - May~July

Zephyranthes candida  
White windflower  
/ perennial  
/ 20-30cm  
/ flower - July~Nov

Hemerocallis fulva  

c.

AQUATIC FOREST
**RIPARIAN WOODLAND**

- **Ligustrum lucidum**  
  Chinese privet  
  / evergreen  
  / up to 3m/10ft  
  / flower - Mar-Jun

- **Osmanthus fragrans**  
  Sweet osmanthus  
  / evergreen  
  / 3-5m/10ft  
  / flower - Sep-Oct

- **Mahonia fortunei**  
  Chinese mahonia  
  / evergreen  
  / 0.5-2m/16-6.5ft  
  / flower - Jan-Feb

- **Aucuba japonica**  
  Japanese laurel  
  / evergreen  
  / up to 5m/16ft  
  / flower - Mar-Jun

- **Ligustrum japonicum**  
  Golden privet  
  / evergreen  
  / 3-5m/10ft  
  / flower - May-Jun

- **Oxalis corymbosa**  
  Common wood sorrel  
  / perennial  
  / 10-40cm/4-16in  
  / flower - Mar-Oct
Salix babylonica
Weeping Willow
/ deciduous / riparian / 12-18m

Pittosporum tobira
Japanese pittosporum
/ evergreen / up to 6m

Jasminum sambac
Arabian jasmine
/ evergreen / up to 3m

Common Hibiscus
/ deciduous / 3-4m

Gardenia jasminoides
Cape jasmine
/ evergreen / 

Oxalis corymbosa
Common wood sorrel
/ perennial / 10-40cm / flower - Mar - Dec

Cynodon dactylon
Scutch grass
/ perennial / 10cm

Zephyranthes candida
White windflower
/ perennial / 20-30cm / flower - July - Nov

Ilex crenata
Box-leaf holly
/ evergreen / 3-5m

Rhododendron simul
Sims Azalea
/ evergreen / 2-5m

Zoysia matrella
Zoysia Manila
/ perennial / 12-20cm

Cercis chinensis
Chinese redbud
/ deciduous / 8-10m / flower - Apr - May

Jatropha curcas
/ evergreen / up to 3m

Zoysia jasminoides
Cape jasmine
/ evergreen / 

Zoysia matrella
Zoysia Manila
/ perennial / 12-20cm

Prunus serrulata
Japanese Flowering Tree
/ deciduous / 8-10m / flower - Apr

Hibiscus syriacus
/ deciduous / 12-18m

Crape Myrtle

Greenway Park Design phase three - site design / plant zone Meadow
Eleocharis dulcis
Water Chestnut
/ height 1.5m
/ water depth 3cm
/

Juncus effusus
Soft rush
/ height 1.5m
/ water depth 8cm
/

Scirpus cernuus
Bulrush
/ height 30cm
/ water depth 5cm
/

Acorus calamus
Sweet flag
/ height 0.5m
/ water depth 25cm
/

Canna indica
Canna edulis
/ height 0.5-2.5m
/ water depth 30-60cm
/

Pontederia cordata
Pickerel weed
/ height 30-70cm
/ water depth 10-20cm
/

Rubus parvifolius
Japanese Bramble
/ height 1m
/ water depth 10cm
/

Juncus effusus
Soft rush
/ height 1.5m
/ water depth 8cm
/

Miscanthus sinensis
Maiden Grass
/ height 2.5m
/ water depth 0cm
/

Rubus parvifolius
Japanese Bramble
/ height 1m
/ water depth 10cm
/

Canna indica
Canna edulis
/ height 0.5-2.5m
/ water depth 30-60cm
/

Juncus effusus
Soft rush
/ height 1.5m
/ water depth 8cm
/

Scirpus cernuus
Bulrush
/ height 30cm
/ water depth 5cm
/

Lonicera japonica
Japanese honeysuckle
/ height 10m
/ water depth 30cm
/

Typha minima
Dwarf bulrush
/ height 0.8m
/ water depth 10cm
/

Cyperus papyrus
Paper reed
/ height 4.5m
/ water depth 10cm
/

Rosa sp.
Japanese bramble
/ height 1.6-3.0m
/ water depth 0cm
/

Phase three - site design / plant zone Wetland
APPENDIX

6

site analysis
case study
conceptual design
WEBSITES

Overall
http://en.wikipedia.org/wiki/Huzhou
http://en.wikipedia.org/wiki/Lake_Tai
http://map.baidu.com
http://en.wikipedia.org/wiki/Zhao_Mengfu
http://en.wikipedia.org/wiki/Lu_Yu
http://baike.baidu.com/view/7461.htm#9

Case Study

Site Analysis

BOOKS
water flow form / nature area
Thank you for reviewing Lake Tai Greenway Project.