

The background of the slide is a detailed historical painting of a busy Venetian street. The scene is filled with a large crowd of people in period clothing. In the foreground, several figures are engaged in what appears to be a public event or performance. A stone bridge with an archway is visible on the right side. In the background, a tall church tower with a dome and a spire rises above the buildings. The overall atmosphere is one of a vibrant, historical urban setting.

# The 20<sup>th</sup> Anniversary of the Venice Project Center

Fabio Carrera  
WPI-IGSD

Venice Project Center

August 23, 2007



# Recognition

8/1999



9/2002

8/2003



9/2003



9/2005

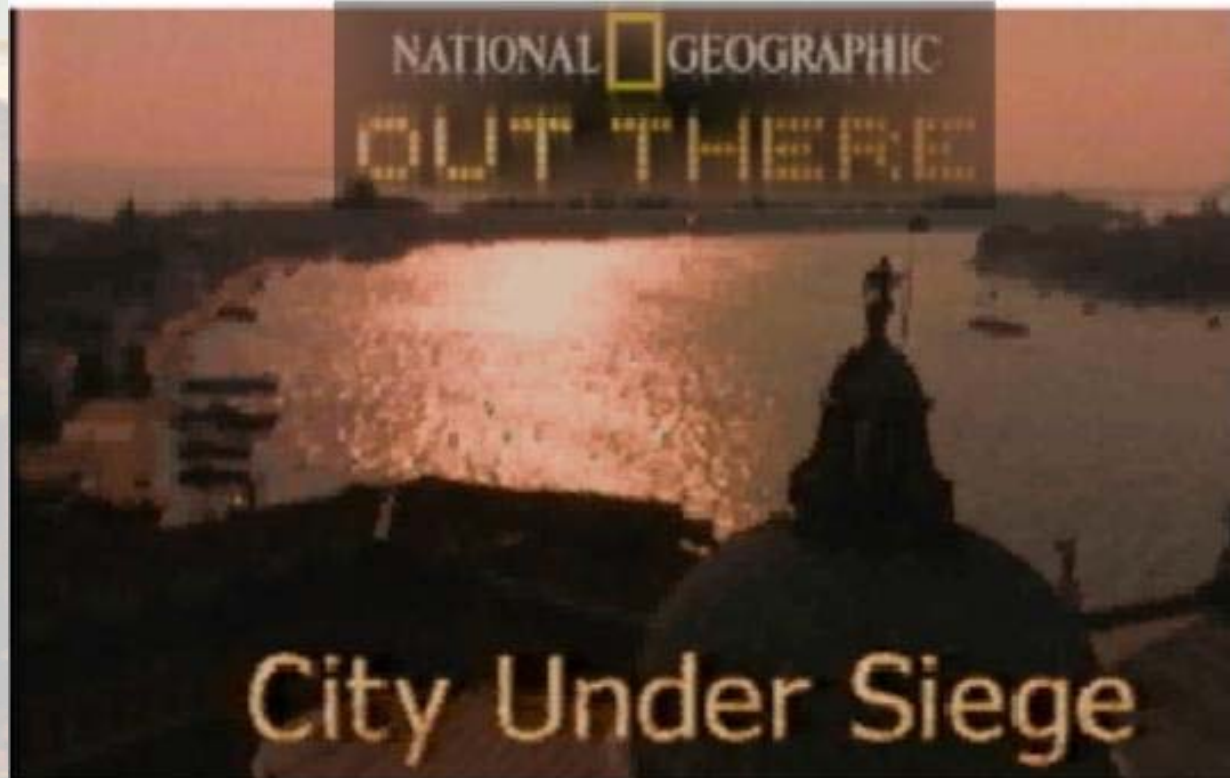


10/2003



WORLD SERVICE.com

# National Geographic Video



**Channel:**

**Series Title:**

**Program Title:**

**Aired around the world:**

**National Geographic Video**

**Out There**

***City under Siege***

**2002-today**





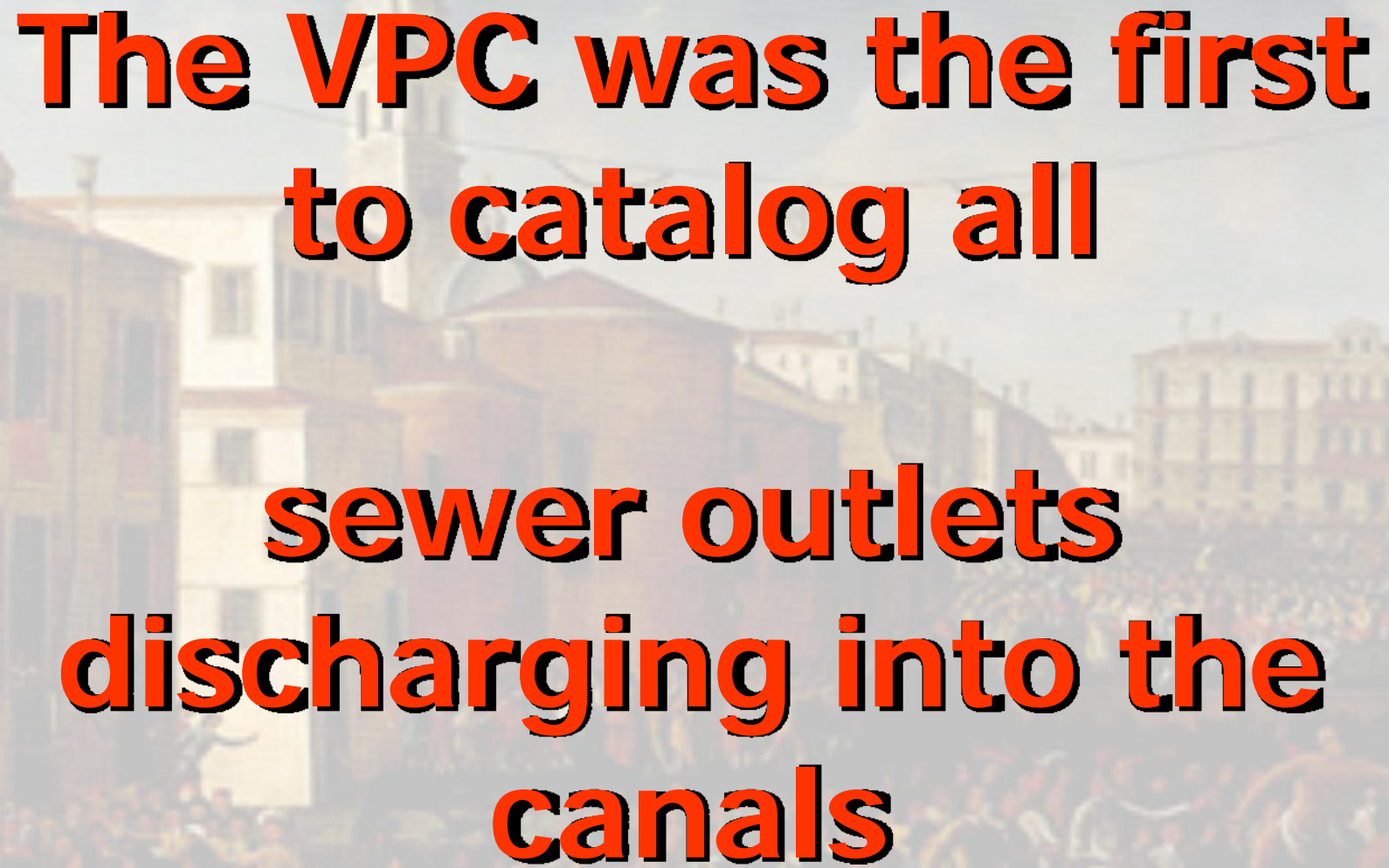
# 5 IQP Areas

- **Environment**
- **Art**
- **Socio-Economics**
- **Urban Maintenance**
- **Miscellaneous**

A historical painting depicting a crowded street festival in a European town. The scene is filled with people in various activities, including dancing and playing games. In the background, a prominent church tower with a dome and a bell tower rises above the buildings. A bridge with arches is visible in the lower right corner. The overall atmosphere is one of a busy, communal event.

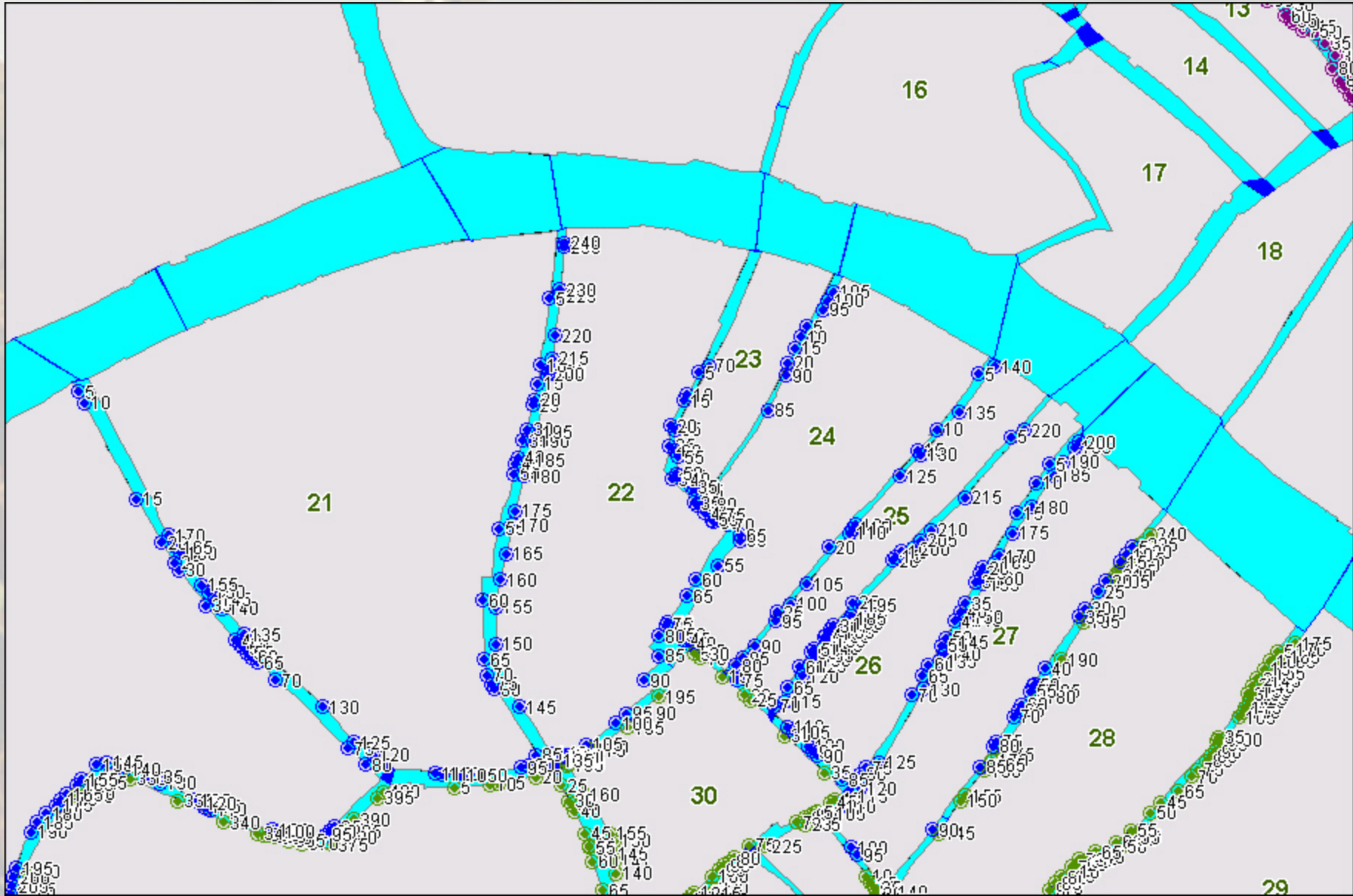
# Environment



The background of the slide is a historical painting depicting a bustling canal scene. In the foreground, a large crowd of people is gathered on a bridge or walkway over a canal. Some people are walking, while others appear to be engaged in activities. In the middle ground, several boats are visible on the water. The background features a dense row of multi-story buildings with various architectural styles, including windows and balconies. The overall scene suggests a busy, urban environment from a past era.

**The VPC was the first  
to catalog all  
sewer outlets  
discharging into the  
canals**

# Sewer Outlets







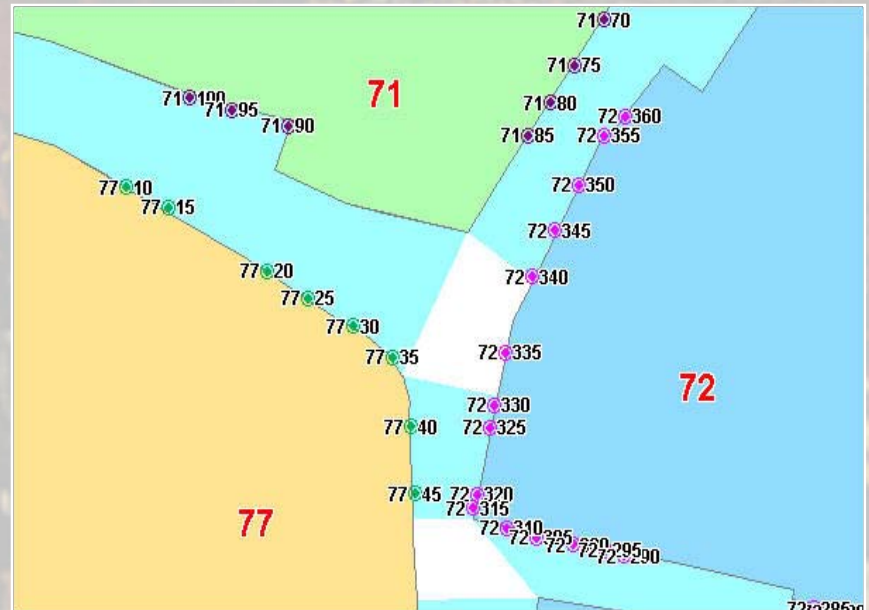
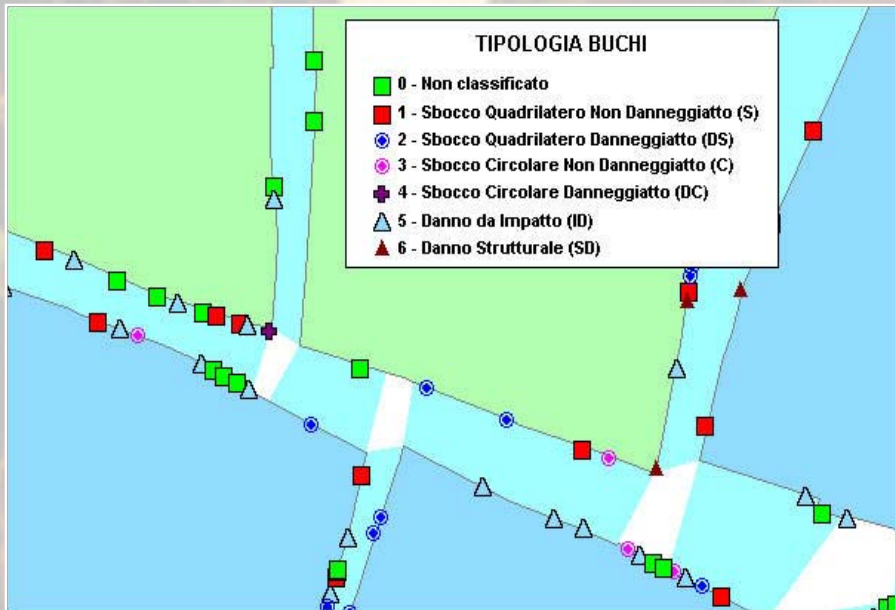
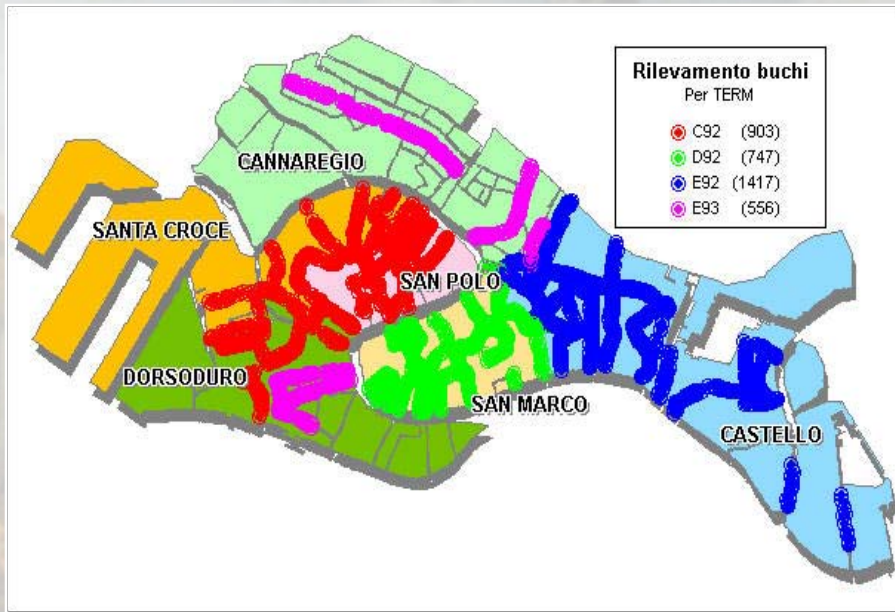
**National Geographic Magazine (August 1999)**

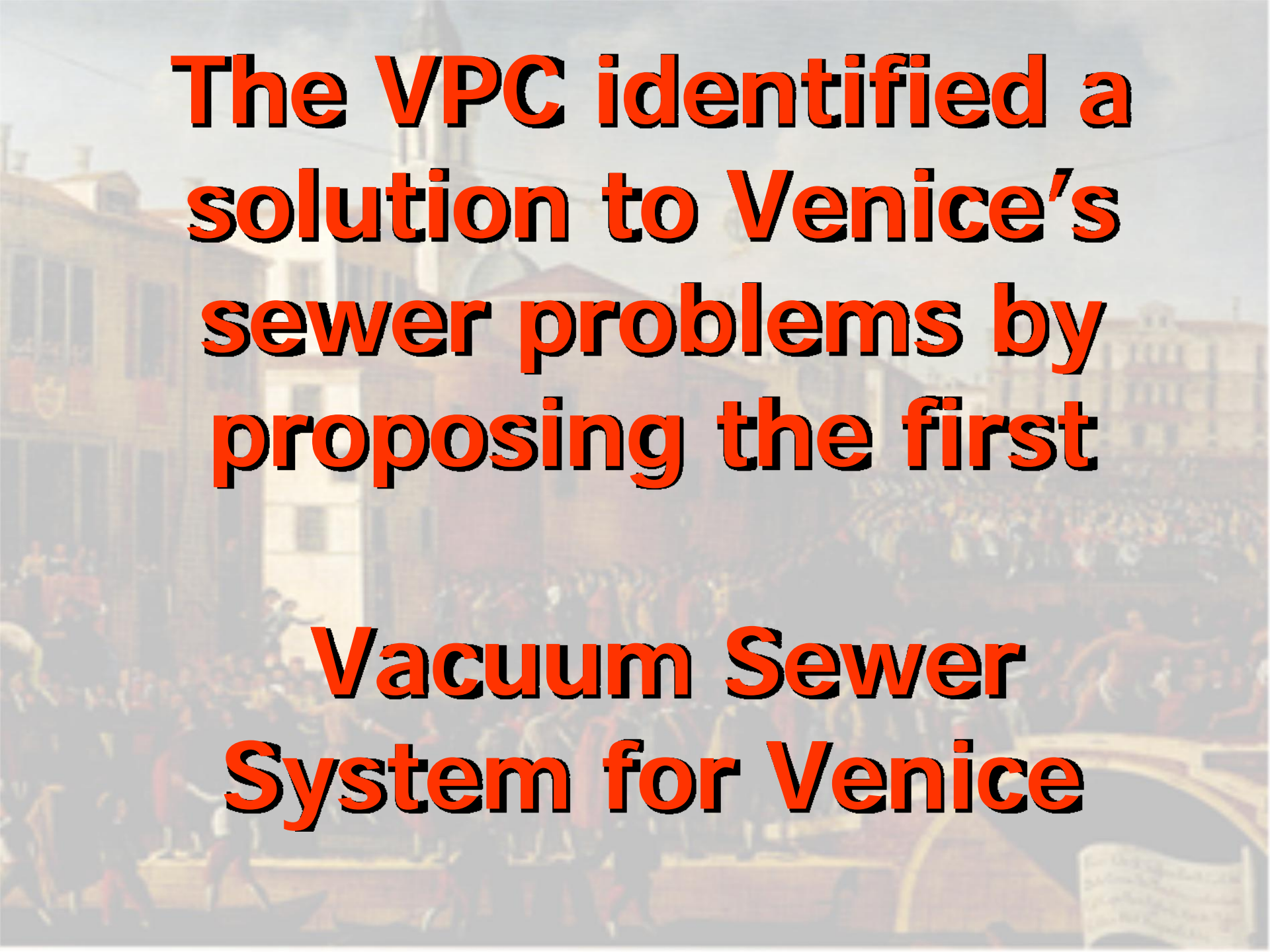


# Wall Damage







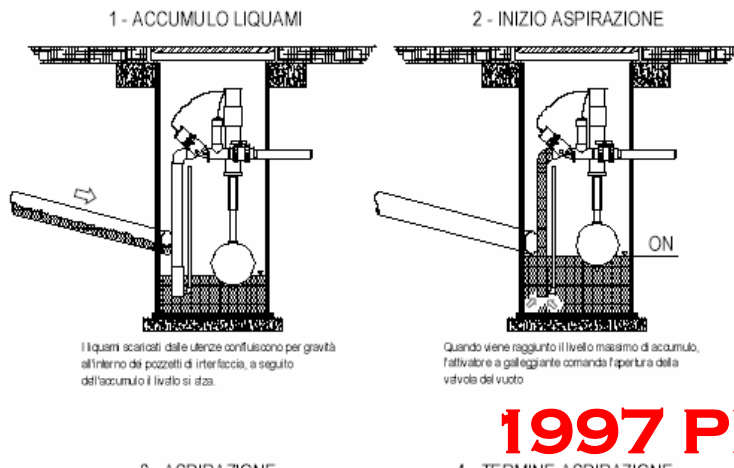
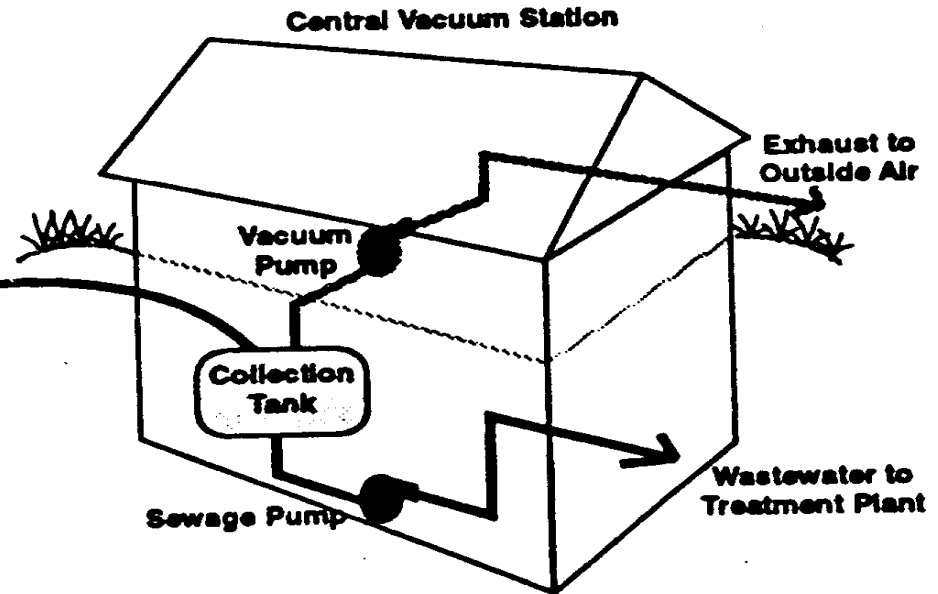
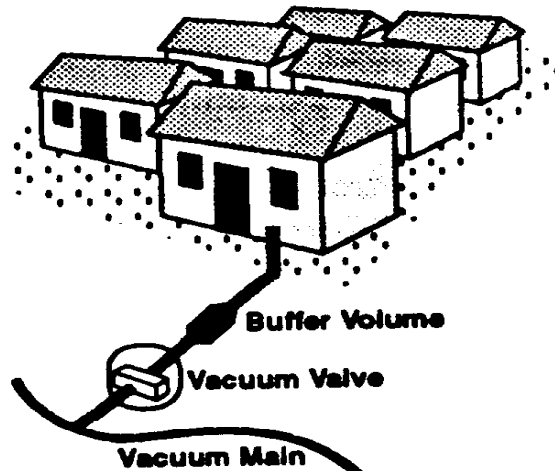


**The VPC identified a solution to Venice's sewer problems by proposing the first**

**Vacuum Sewer System for Venice**

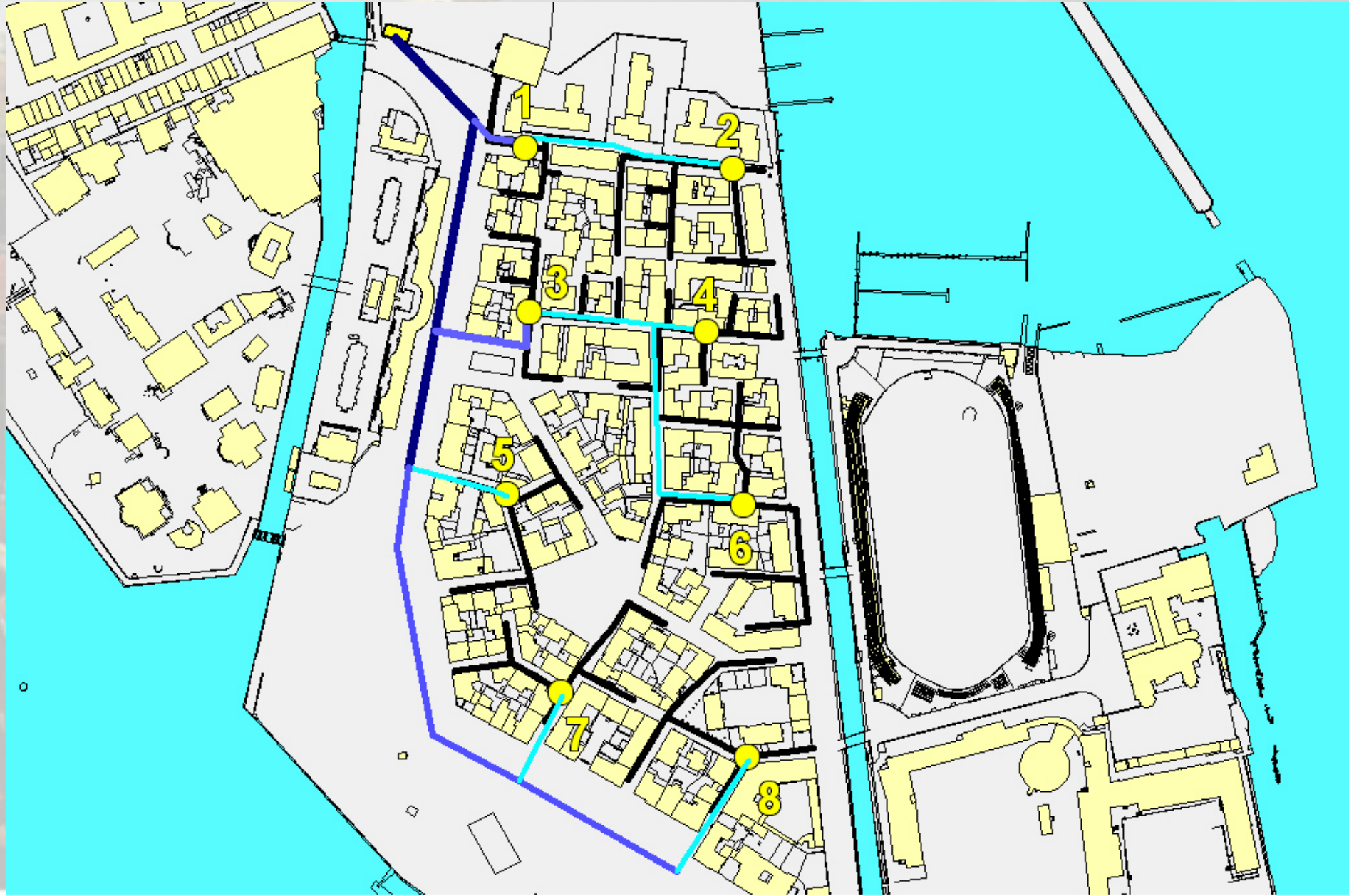


# Vacuum Sewers

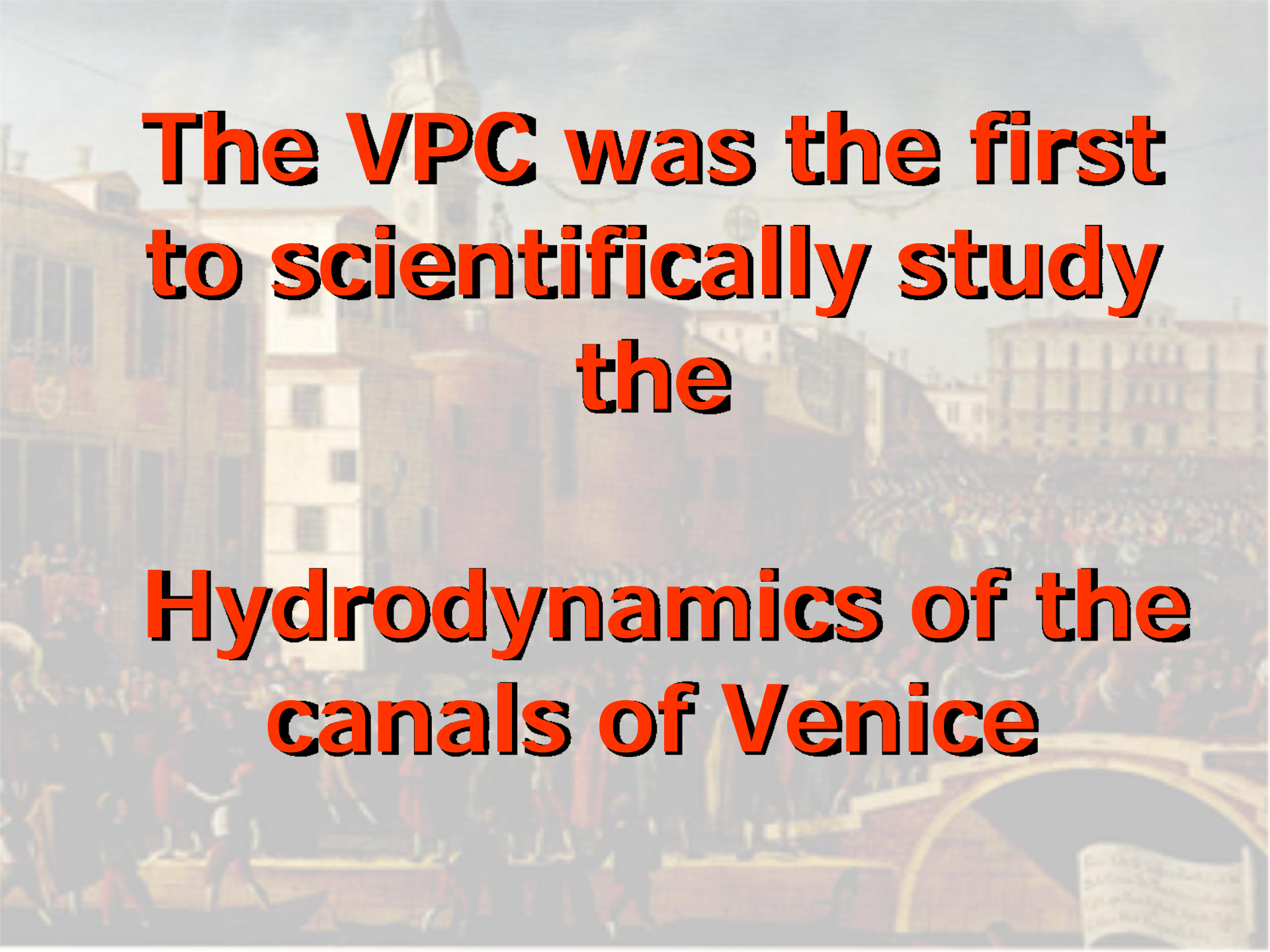


**1997 PROJECT OF THE YEAR AWARD**

# S.Elena Plan



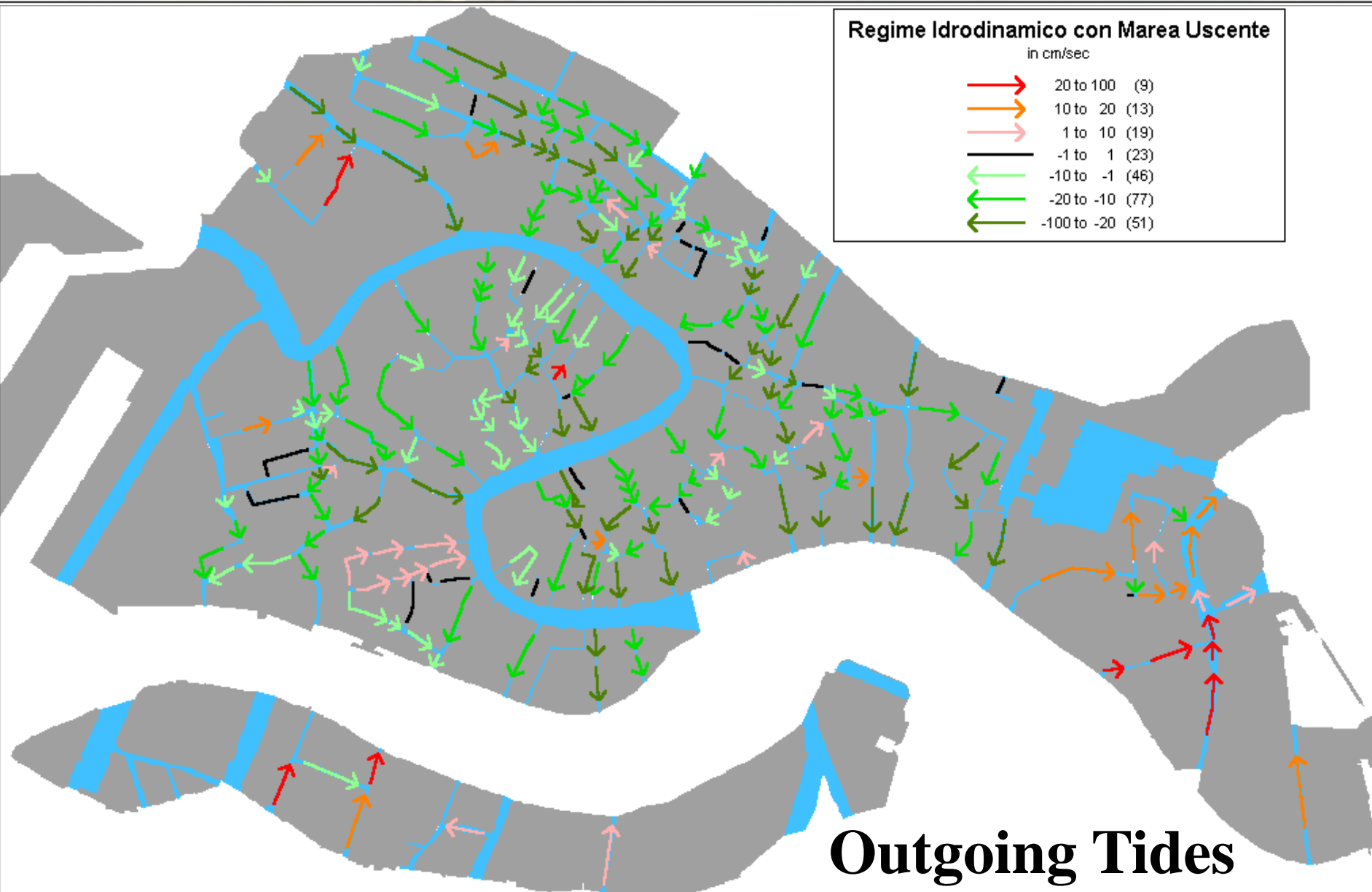




**The VPC was the first  
to scientifically study  
the**

**Hydrodynamics of the  
canals of Venice**

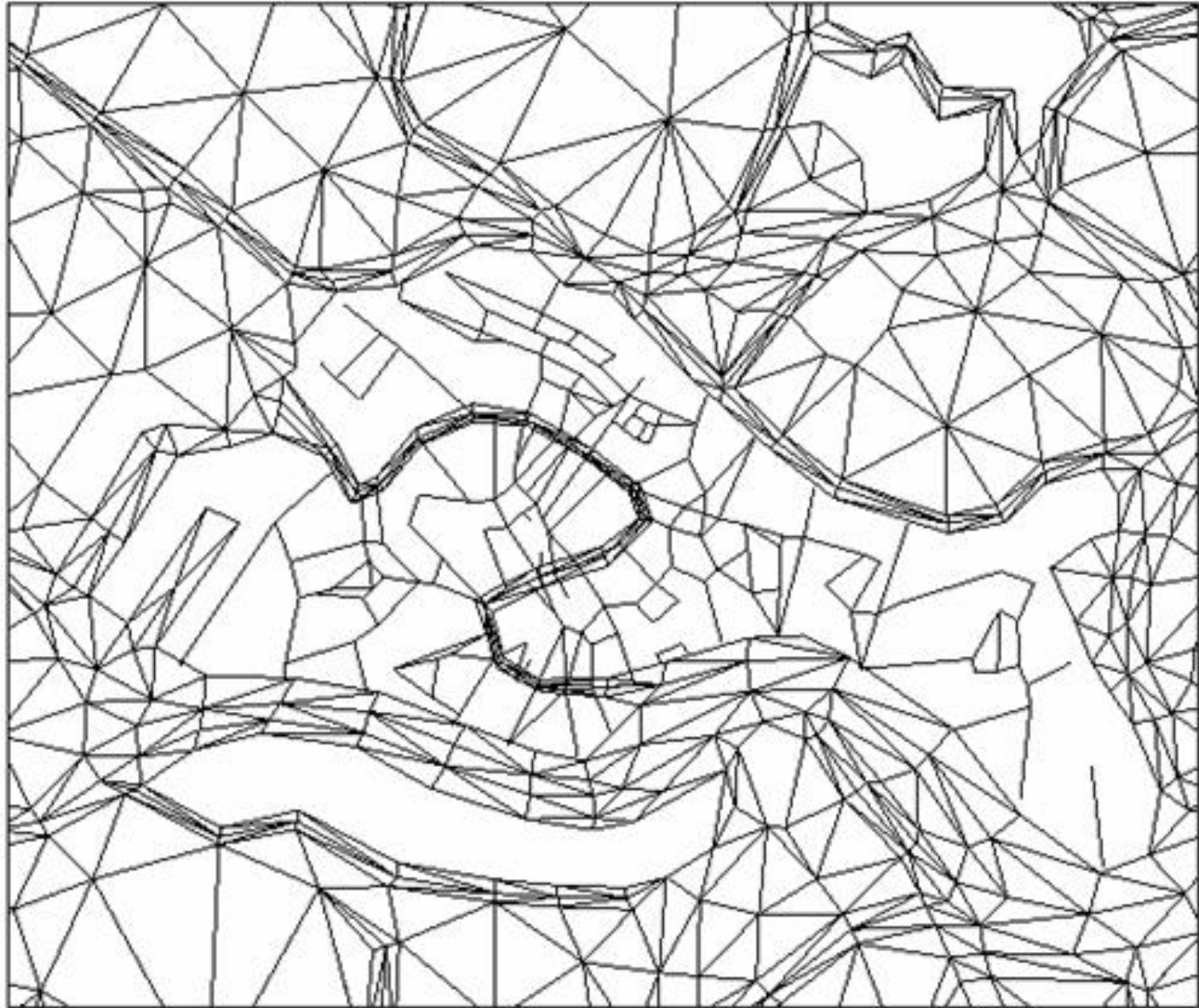
# Hydrodynamics



**Outgoing Tides**



# Hydrodynamic Modeling



# Other VPC Firsts

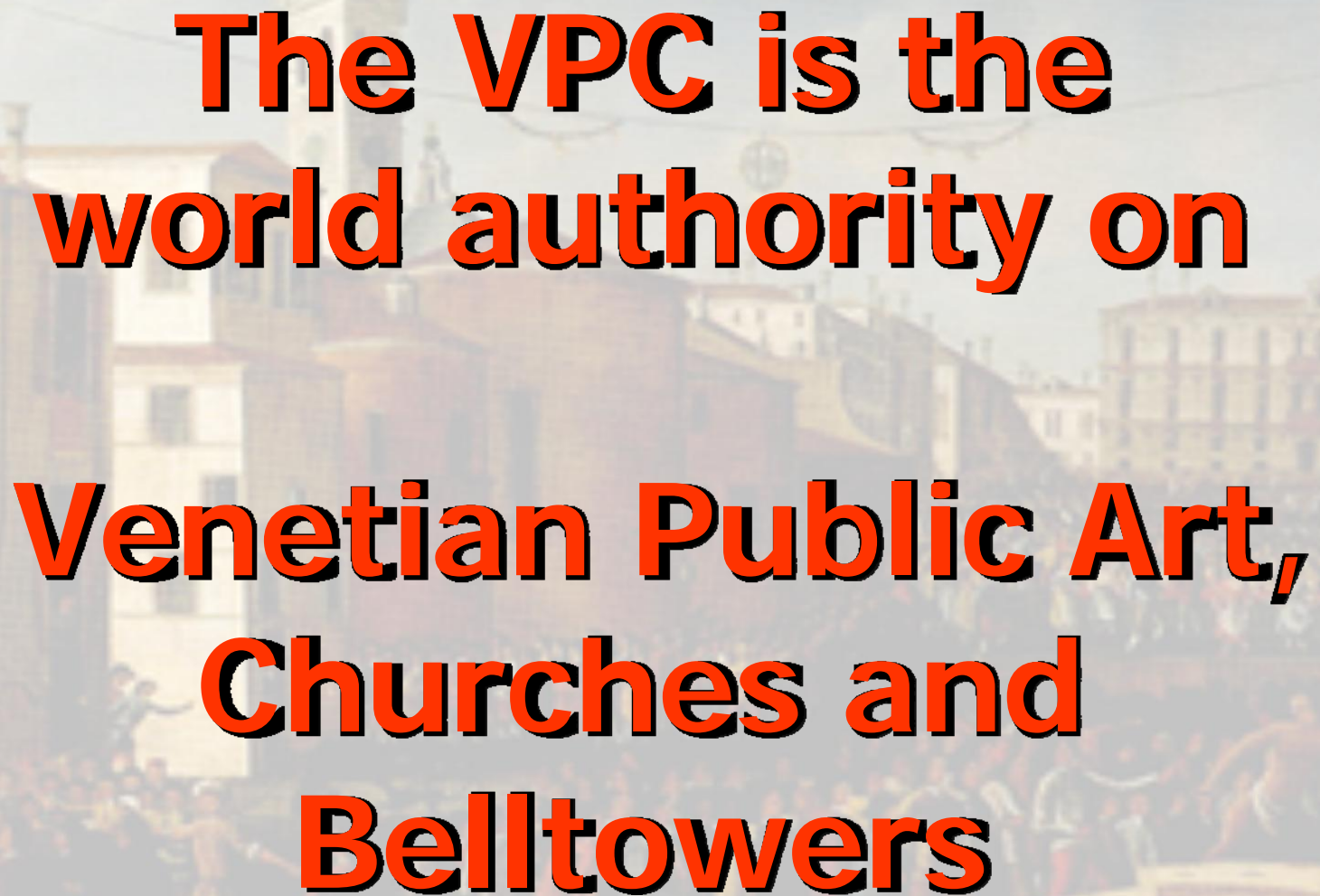
- 1. First tree inventory**
- 2. First garbage recycling program**
- 3. First map of lagoon biotopes**
- 4. etc.**







# Art



**The VPC is the  
world authority on  
Venetian Public Art,  
Churches and  
Belltowers**





Statues



Roundels (*patera*)



Coats of Arms (*stemmi*)



Crosses



Reliefs (*rilievi*)



Logos (*Simboli*)



Plaques



Fragments



*Formelle*



Codice **CN004E** MancanteIndirizzo **Rio Terà Lista de Spagna**Sestiere **CN**Codice Vecchio **CN004B**Parrocchia **S. Geremia**N. Civico **CN 228**Altro Civico **229**Pagina Rizzi **240**Tipo **Patera**Sottotipo **Patera**

Opera: 5 di 2930

Soggetto Generale **Fauna**Soggetto **Quadrupede****Informazioni Generali**

Collocazione

Tra il primo e il secondo piano.

Anno

Anno Normalizzato **1150**Secolo **12**

Parte Secolo

 CircaMateriale **Marmo Greco** Materiale Incerto Opera Moderna

Famiglia

 Famiglia Incerta

Autore

 Autore IncertoConservazione **Cattiva****Iscrizioni**Indice Urgenza **1****Tipo Edificio** Residenziale  Turistico  Chiesa  Commerciale**Descrizione**

Marmo greco, diam. cm. 30 c. A des.: quadrupede (felino o canide) con testa volta all'indietro ed estremità della coda in bocca.

**Cavi** Cavi Telefonici  Cavi Elettrici  Altri Cavi**Bibliografia**

Vuchetich, I. f. 78 n° 32 e 33; Comune, 1905, p. 68; Swiechowski-Rizzi, 1982, p. 65 (nn. 192-93), fig. tav. 15.

**Metalli** Ferro  Altro Metallo  Ganci  Tiranti**Note****Ostruzioni** Scuri  Tubi  Fioriere  Impalcature

Nome Ditta

Data Inizio

Data Fine

Telefono

Zoom



Vista d'insieme



Inserisci Foto

Elimina Foto

**Note Foto** Da Barca**Foto Precedenti** Foto Digitale  Foto su Rizzi  Foto da Rifare

Pagina Foto Rizzi

**0** Foto Verticale



# The WPI Public Art Catalogs

## ■ 5 Public Art Catalogs

- Erratic Sculpture
- Wellheads
- Flagstaffs
- Lunette
- Monuments

## ■ Web-GIS

The screenshot displays the 'Monumenti' web-GIS interface. The main window is titled 'Monumenti' and contains the following information:

- Location:** Campo Santa Fossca
- Physical Information:** Height: 675, Width: 522, Depth: 522
- Subject:** Paolo Sarpi
- Notes/Description:** On foot of statue, inscribed "O. Vanella/GUSE"
- Maps:** Two maps showing the location of the monument in Venice. The left map is labeled 'Location of the monument in Venice' and the right map is labeled 'Closeup of the location of the monument'.
- Images:** Four photographs showing different views of the monument, a statue of Paolo Sarpi on a pedestal.

The interface also includes a search bar, a list of records, and a record number indicator (Record: 1 of 55).

A historical painting depicting a bustling town square. In the background, a tall church tower with a dome and a spire rises above the rooftops. The square is filled with a large crowd of people, some on horseback, and a small bridge with an archway is visible in the lower right. The overall scene suggests a busy, public gathering in a past era.

# Socio- Economics



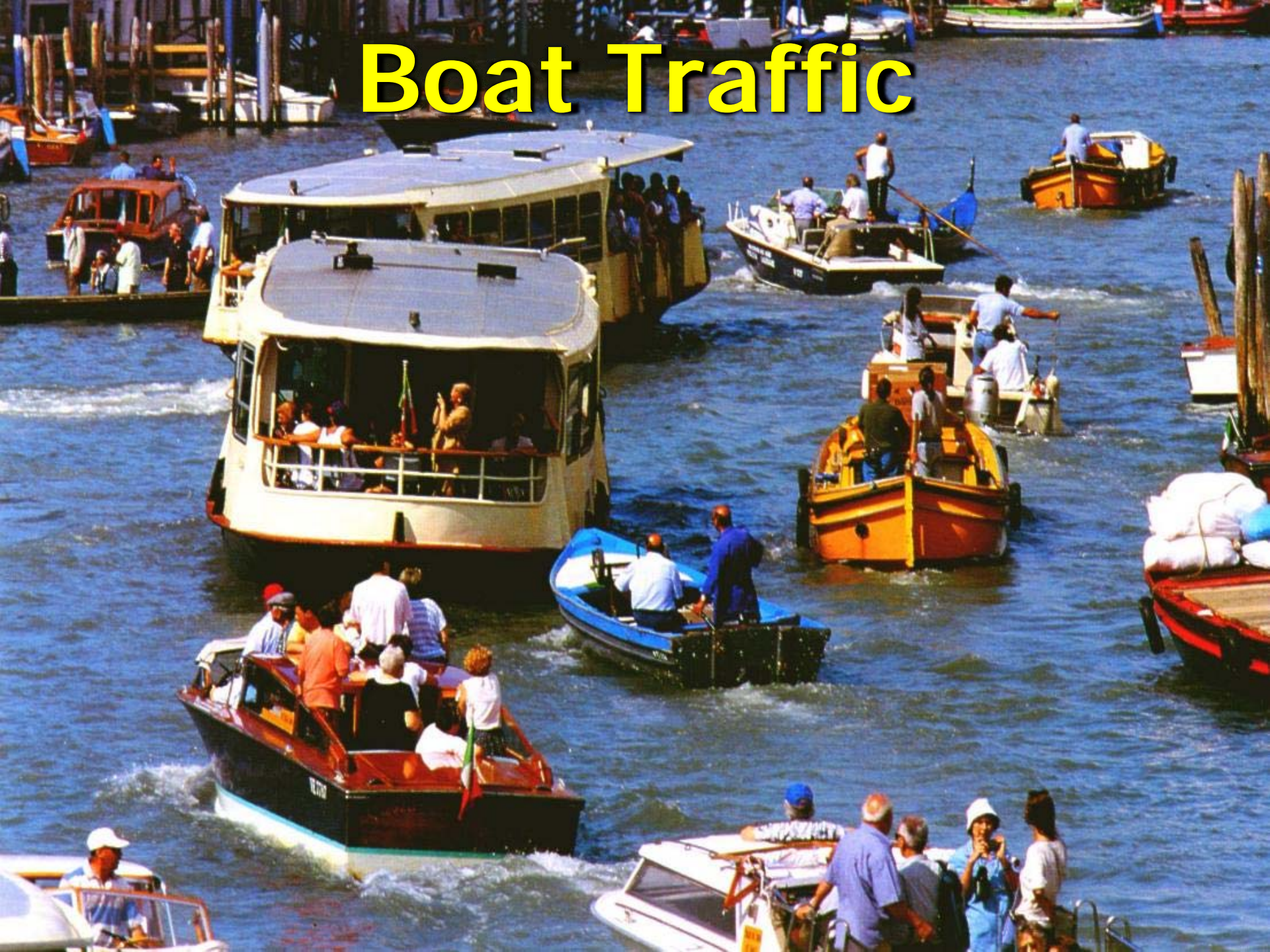


**The VPC is the leading  
authority on**

**Boat Traffic in Venice**

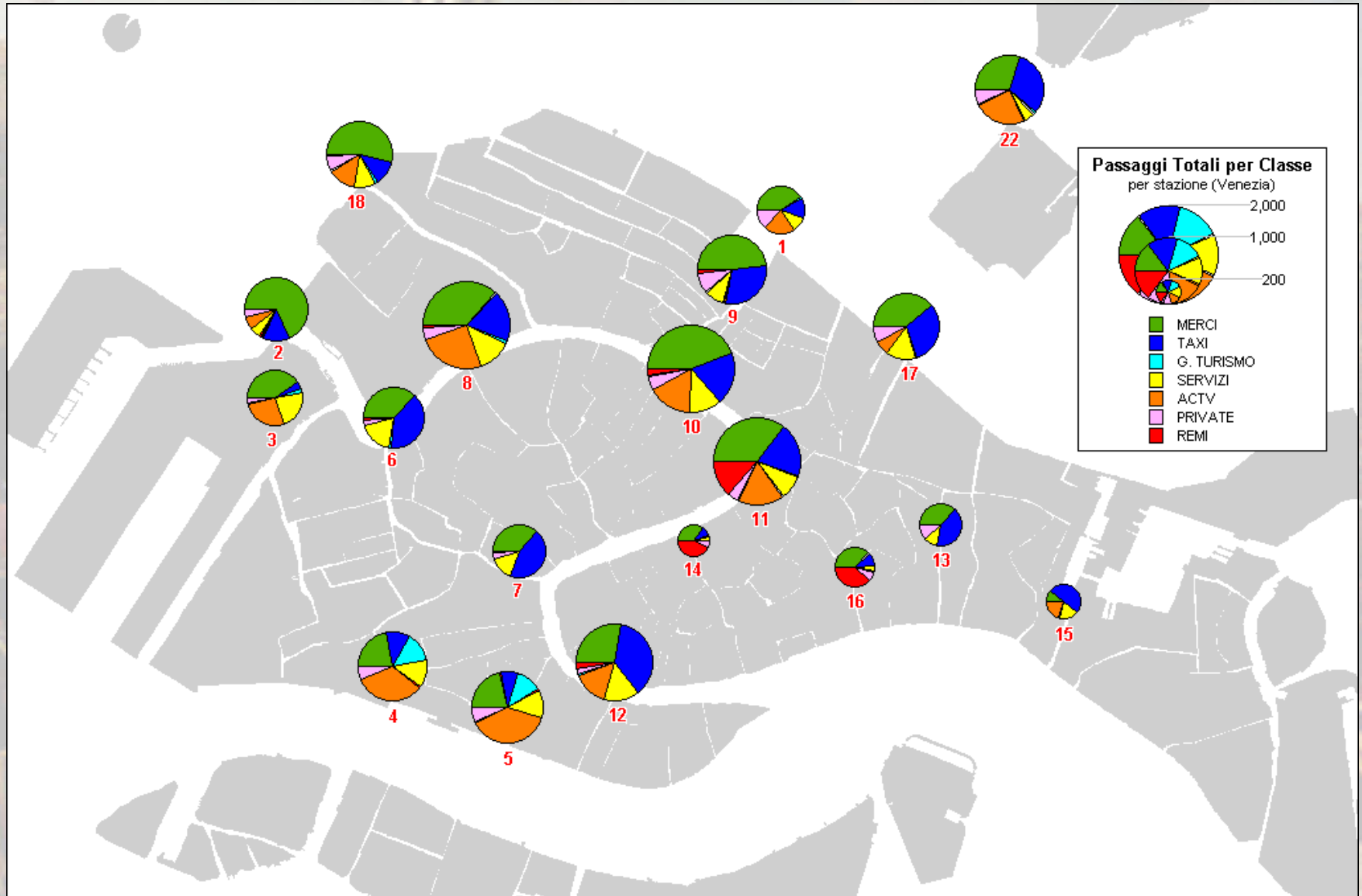


# Boat Traffic





# Traffic Counting Methods



Segmenti | Manovre | Stazioni

Trova  Segmento 1 di 21 **Segmento**  Sestiere o Località

**Segmento** Ultimo Rilevamento  **Rio**

Non Rilevato

**Dimensioni Segmento**

Lunghezza  m

Larghezza Media  m Larghezza Min.  m

**Regolamenti**

Senso Unico

Direzione da  a

**Dim. Max. Natanti**

Largh. Max.  m

Stazza Max.  tonn.

**Temporalità Rilevamento**

Data Rilevamento  Giorno  Orario: Dalle  Alle

CATEGORIA

**DIREZIONE**

Complessivi (in <input type="text" value="10"/> ore)	Nord	Sud
Tot. Passaggi <input type="text" value="803"/>	<input type="text" value="476"/>	<input type="text" value="327"/>
Media Passaggi <input type="text" value="80.3"/> /ora	<input type="text" value="47.6"/> /ora	<input type="text" value="32.7"/> /ora
Max. Passaggi <input type="text" value="157"/> dalle <input type="text" value="9"/> alle <input type="text" value="10"/>	<input type="text" value="93"/> (ora: <input type="text" value="9"/> - <input type="text" value="10"/>	<input type="text" value="78"/> (ora: <input type="text" value="10"/> - <input type="text" value="11"/>

CLASSE

**DIREZIONE**

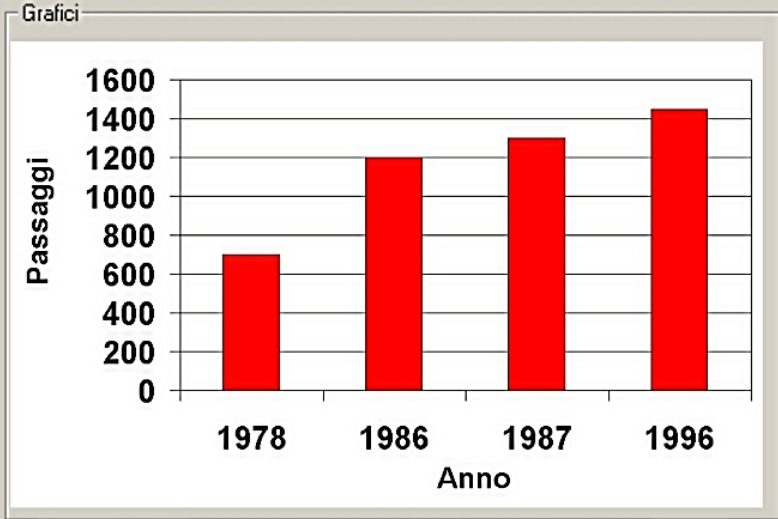
Complessivi (in <input type="text" value="10"/> ore)	Nord	Sud
Tot. Passaggi <input type="text" value="276"/>	<input type="text" value="139"/>	<input type="text" value="137"/>
Media Passaggi <input type="text" value="27.6"/> /ora	<input type="text" value="13.9"/> /ora	<input type="text" value="13.7"/> /ora
Max. Passaggi <input type="text" value="32"/> dalle <input type="text" value="11"/> alle <input type="text" value="12"/>	<input type="text" value="15"/> (ora: <input type="text" value="11"/> - <input type="text" value="12"/>	<input type="text" value="16"/> (ora: <input type="text" value="16"/> - <input type="text" value="17"/>

TIPO

**DIREZIONE**

Complessivi (in <input type="text" value="10"/> ore)	Nord	Sud
Tot. Passaggi <input type="text" value="198"/>	<input type="text" value="94"/>	<input type="text" value="104"/>
Media Passaggi <input type="text" value="19.8"/> /ora	<input type="text" value="9.4"/> /ora	<input type="text" value="10.4"/> /ora
Max. Passaggi <input type="text" value="22"/> dalle <input type="text" value="10"/> alle <input type="text" value="11"/>	<input type="text" value="11"/> (ora: <input type="text" value="9"/> - <input type="text" value="10"/>	<input type="text" value="14"/> (ora: <input type="text" value="10"/> - <input type="text" value="11"/>

Note

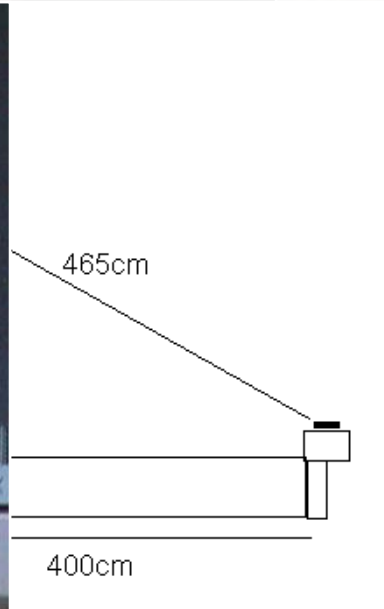
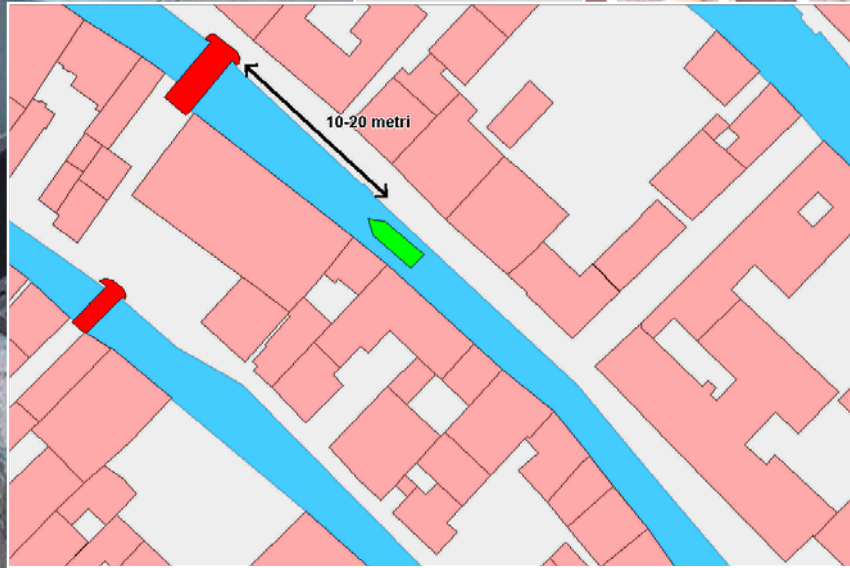
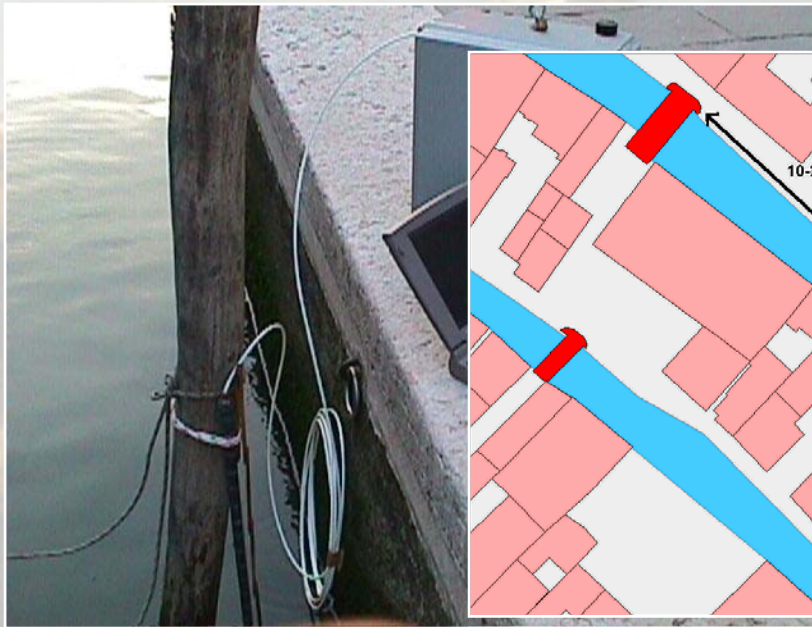


<p>Temporalità</p> <p>Per ora <input type="radio"/></p> <p>Per giorno <input type="radio"/></p> <p>Per anno <input checked="" type="radio"/></p>	<p>Natanti</p> <p>Categorie <input type="radio"/></p> <p>Classi <input type="radio"/></p> <p>Tipi <input type="radio"/></p>	<p>Grafici</p> <p>Linee <input type="radio"/></p> <p>Torte <input type="radio"/></p> <p>Barre <input checked="" type="radio"/></p>	<p>Mappe</p> <p>Insieme <input type="radio"/></p> <p>Dettaglio <input checked="" type="radio"/></p> <p>Tema <input type="radio"/></p>
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Scheda | Selezione | Stampa | Archivio Storico

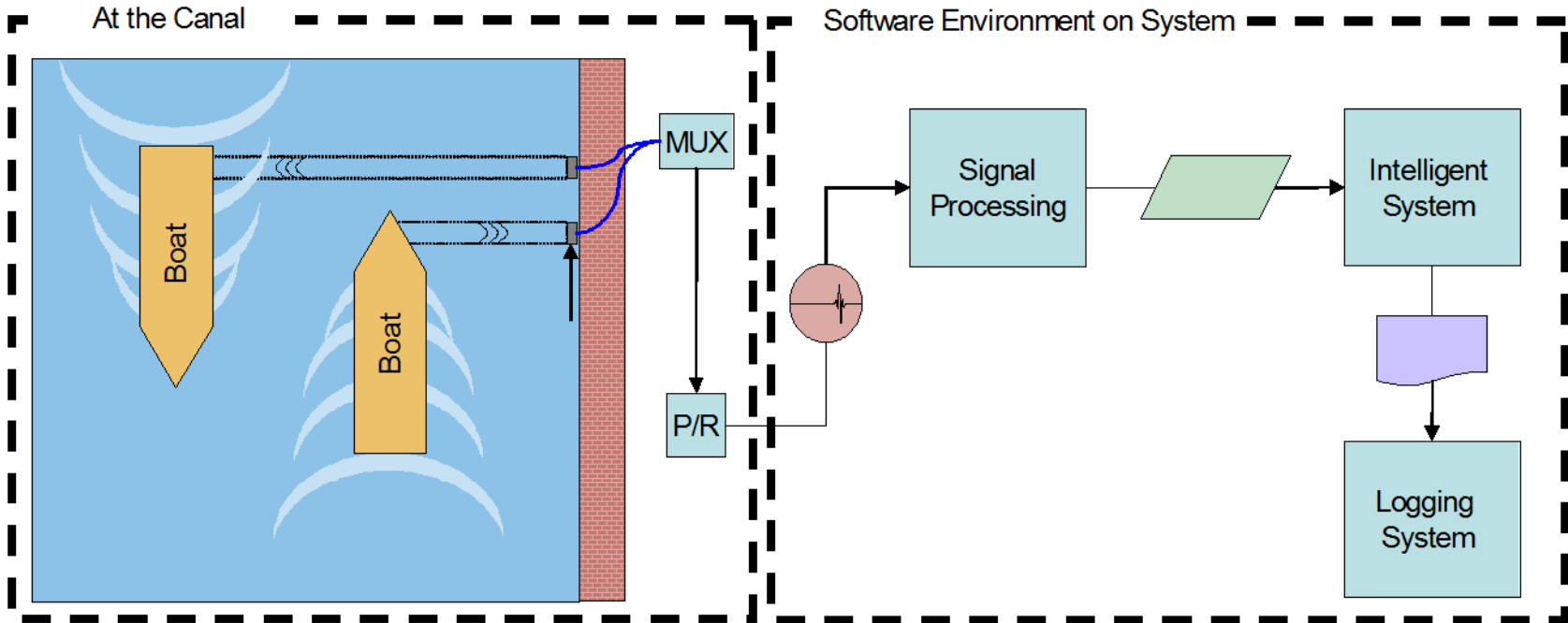


# Automatic Traffic Recording

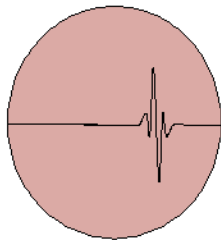


# Ultrasound ATR

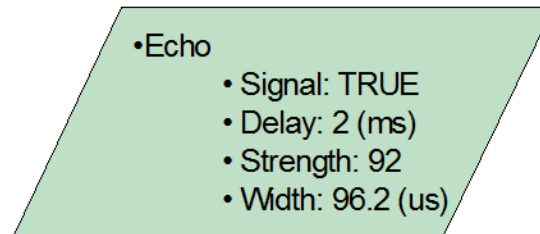
## System Level Block Diagram



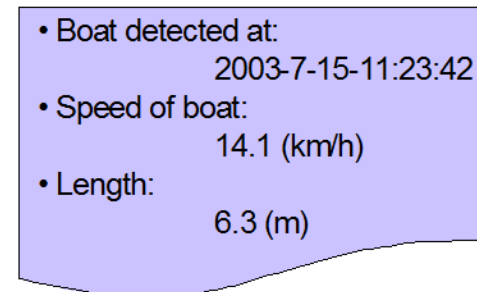
Echo signal



Data after Signal Processing



Logged data



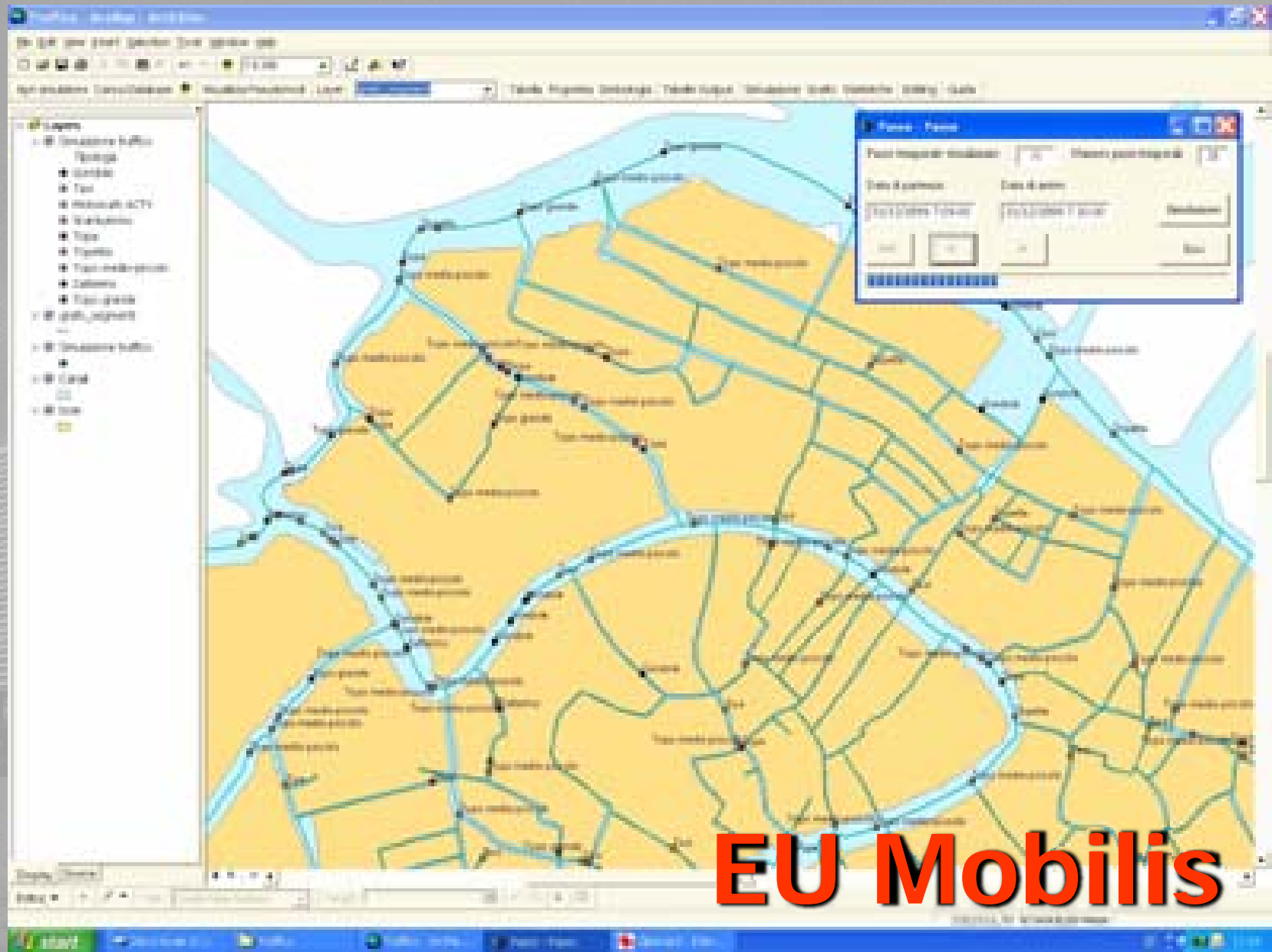
MUX: Multiplexer  
P/R: Pulser/Receiver



# Traffic Graph



# Traffic Model





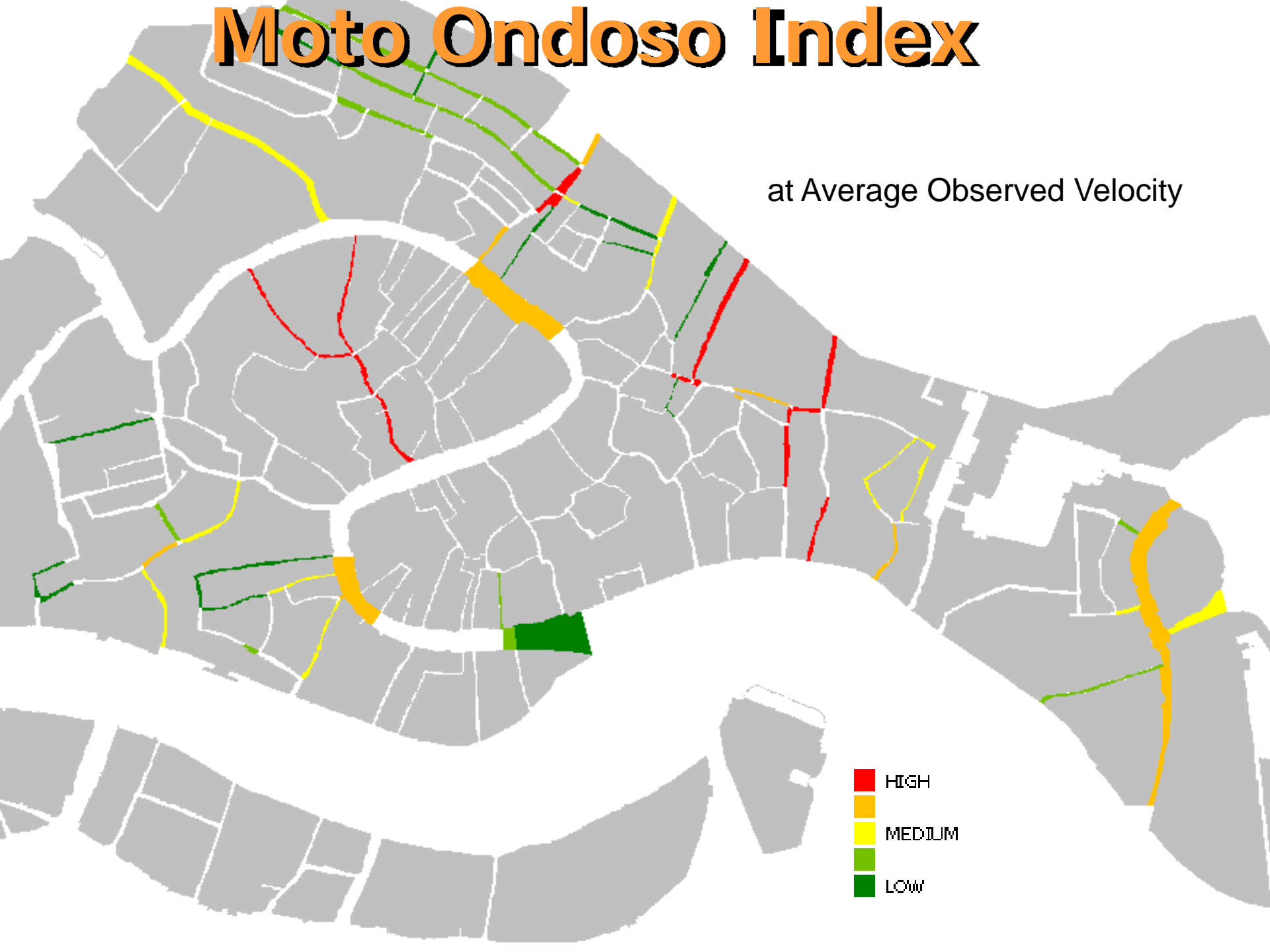


**The VPC is a leader in the  
fight against**

**Moto Ondoso  
(Wake Damage)**

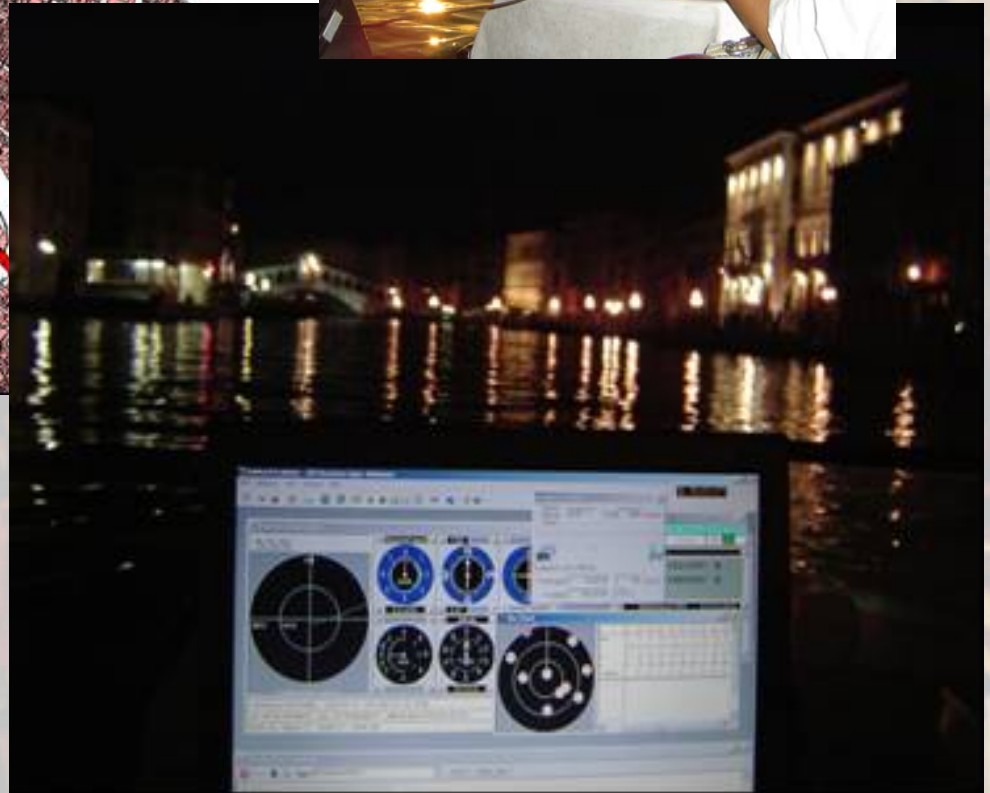
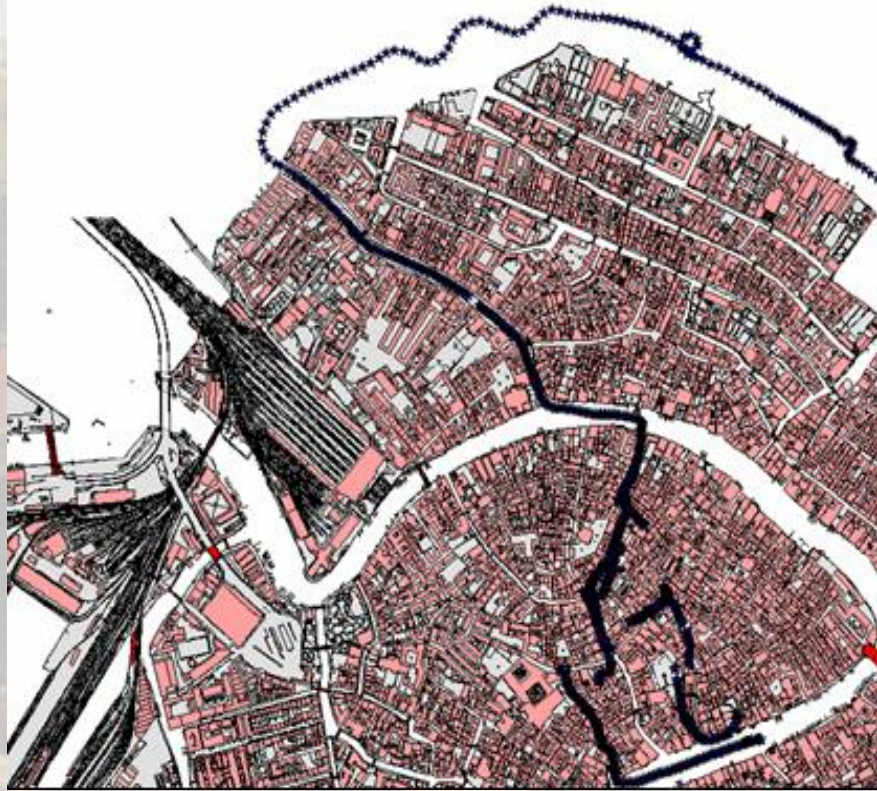
# Moto Ondoso Index

at Average Observed Velocity





# Turbulence Mapping



The background of the slide is a historical painting depicting a bustling street scene in Venice. In the foreground, a large, diverse crowd of people is gathered, some appearing to be in a state of commotion or a public event. The middle ground shows a street with buildings on either side, and a prominent church tower with a dome and a spire rises in the background. The overall atmosphere is one of a significant public gathering or a major event in the city.

**The VPC completely  
revolutionized the**

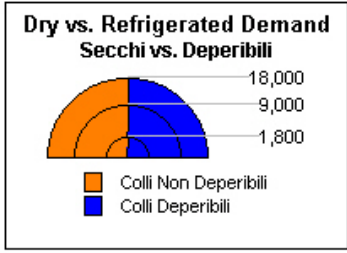
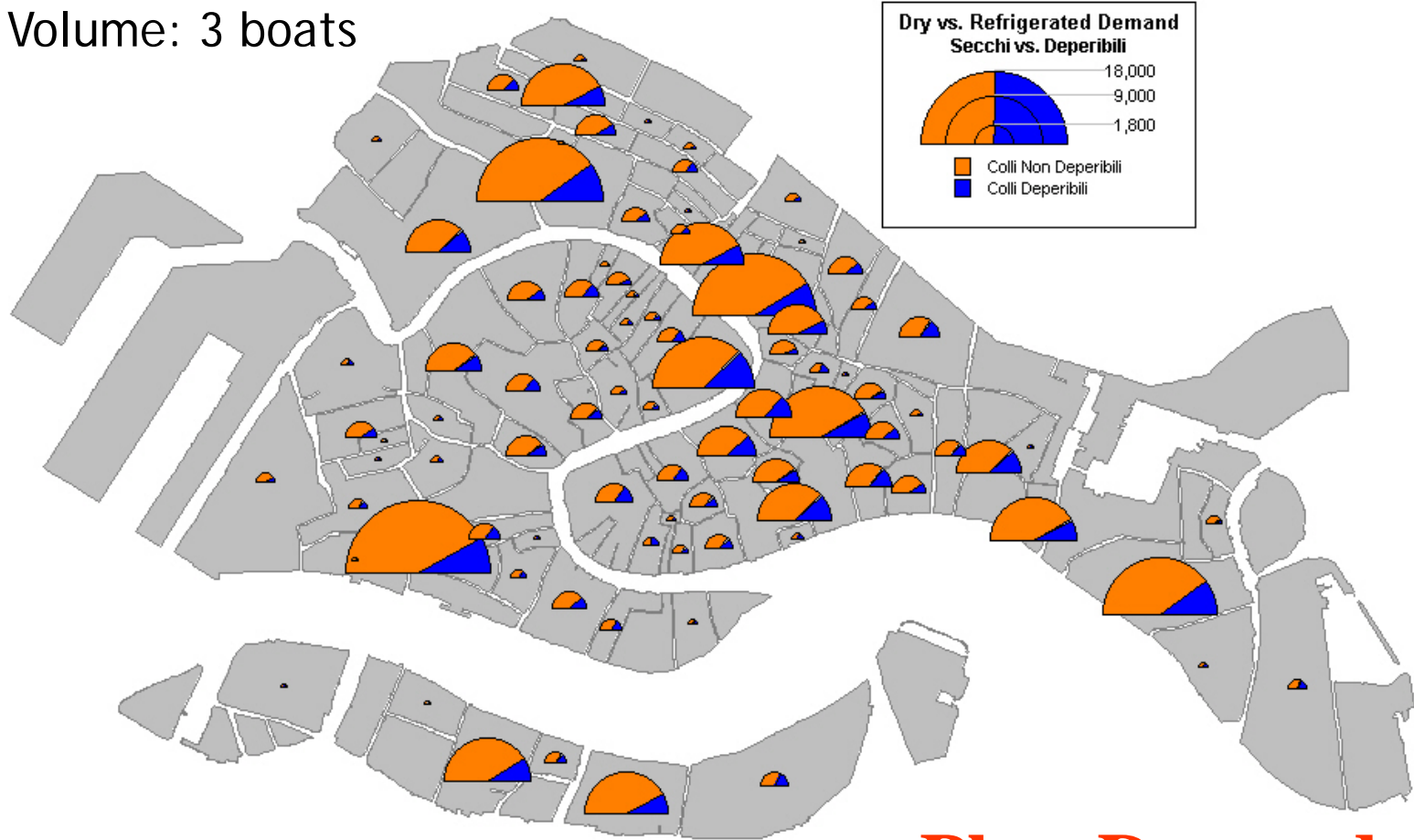
**Delivery of Goods  
in Venice**



# Example: S. Luca Deliveries

Deliveries: 96 boats

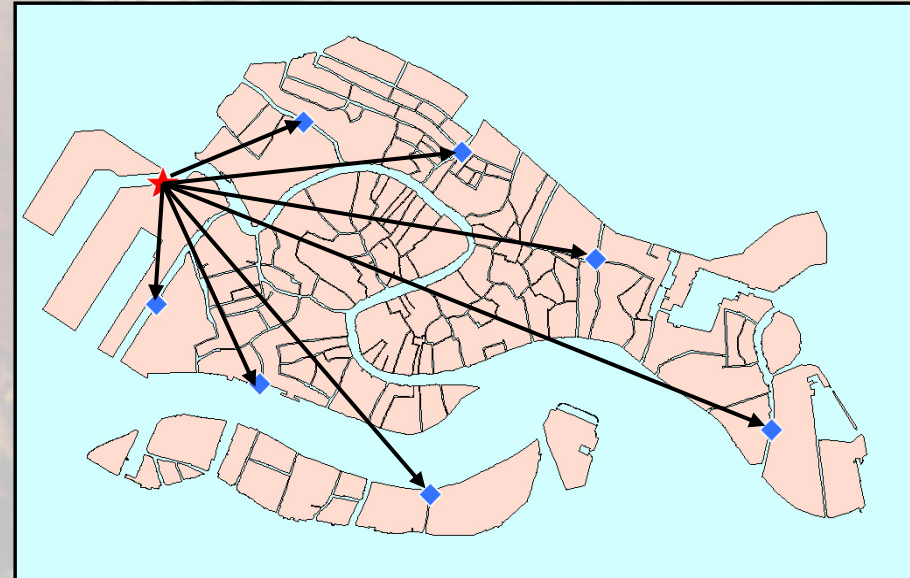
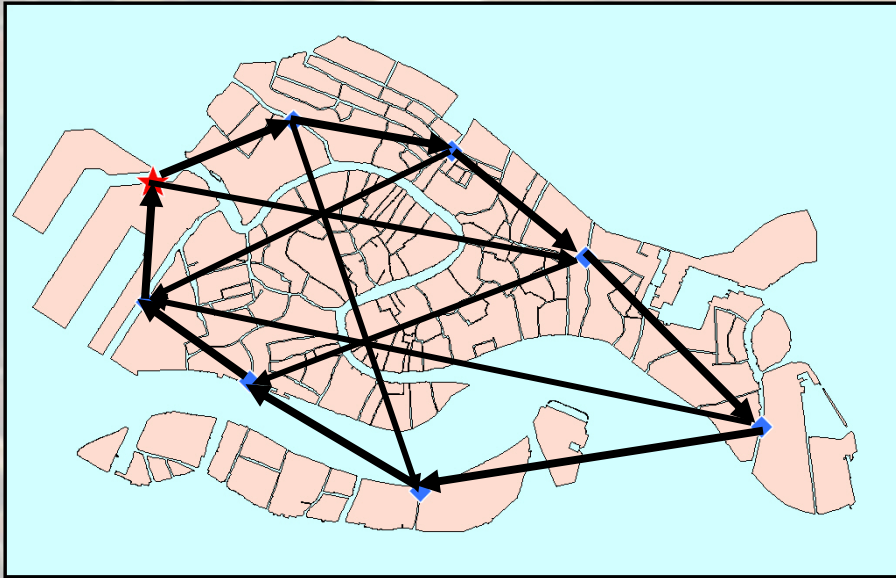
Volume: 3 boats



**Plan-Demanded**

**Dry vs. Refrigerated Goods**

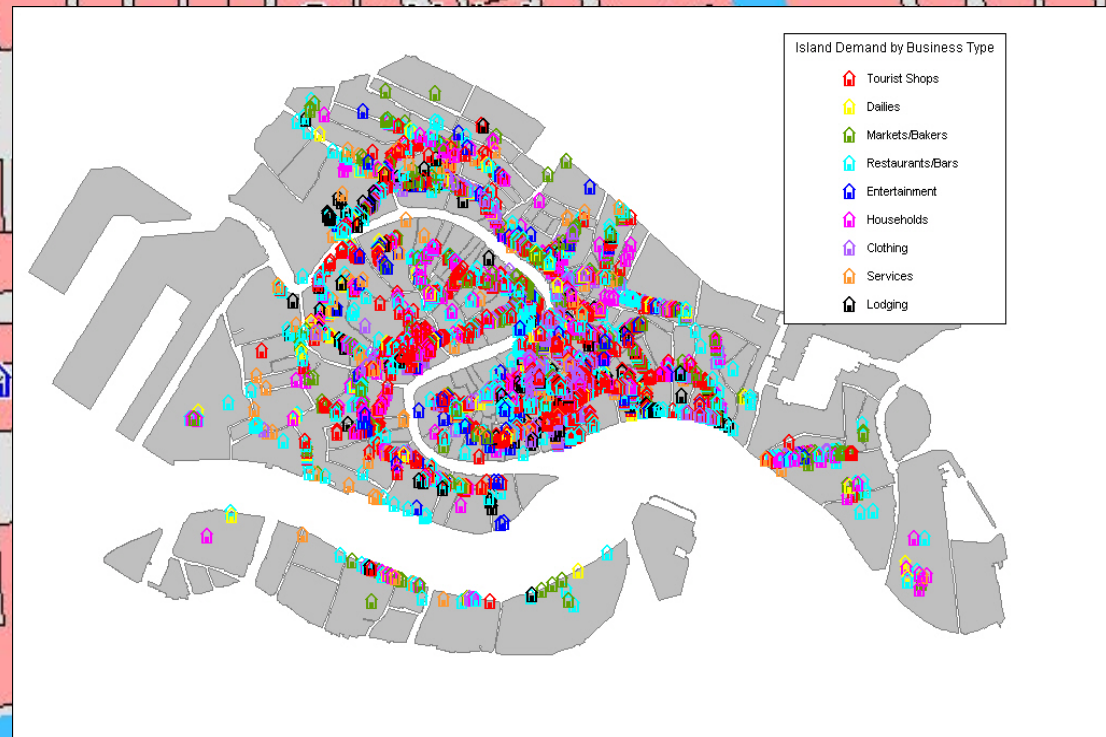
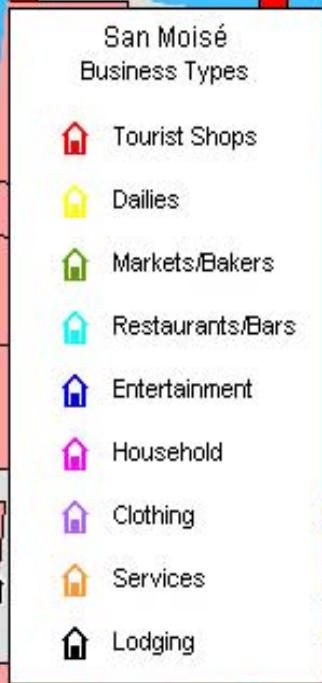
# From deliveries “by Product” to deliveries “by Destination”



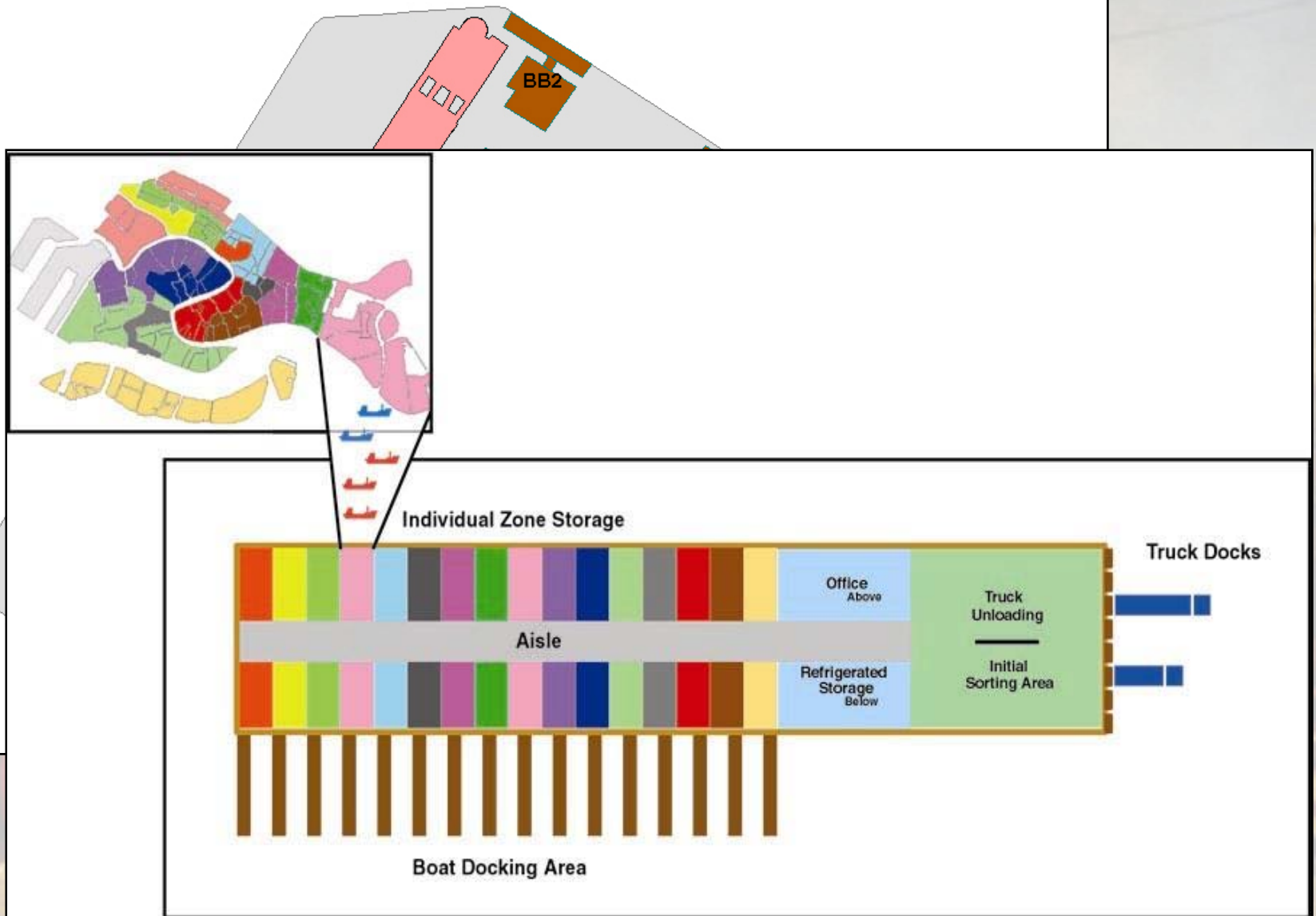
**2001 “PROJECT OF THE YEAR” AWARD**



# Demand for Deliveries at Destination

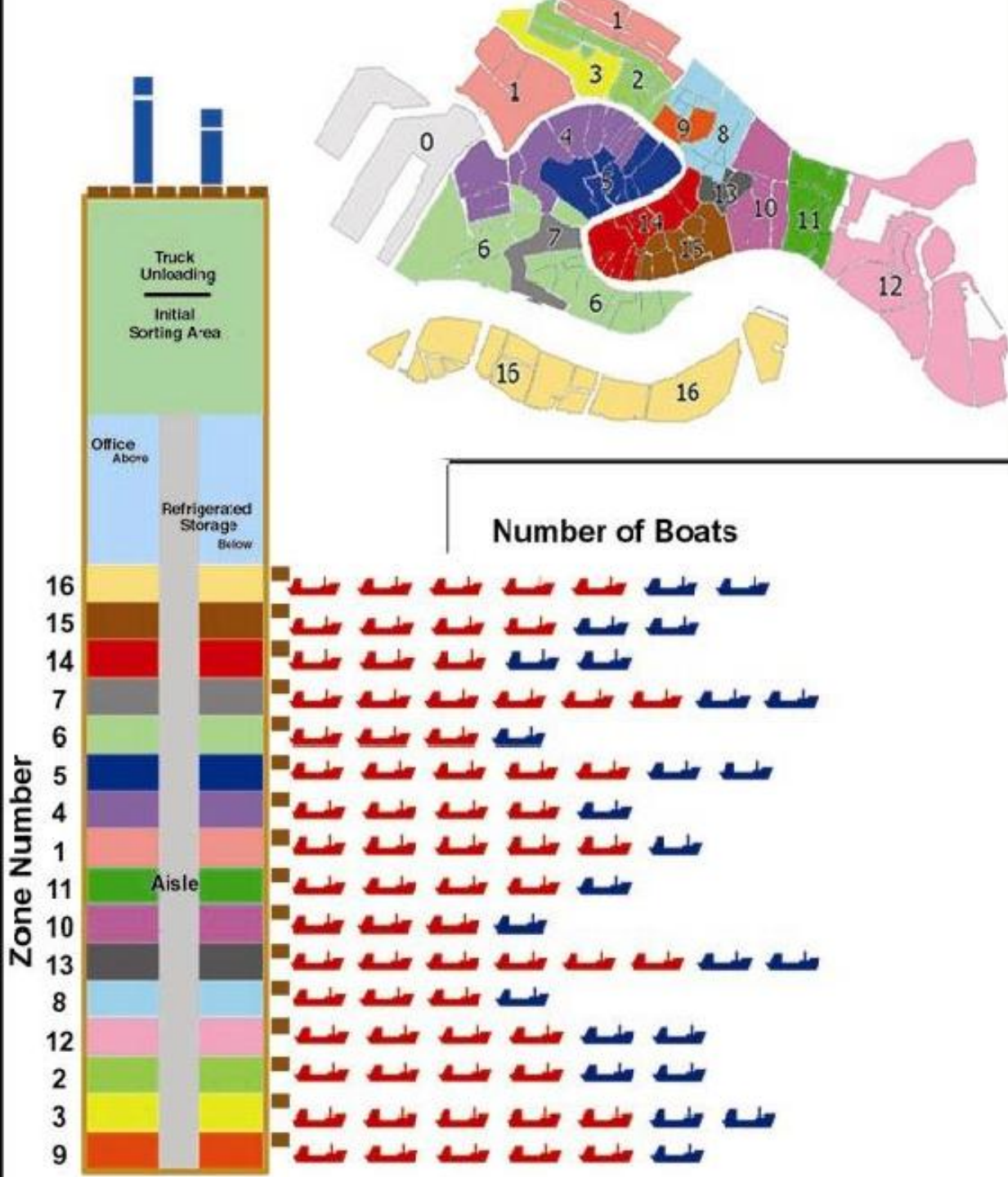


# Logistics Warehouse





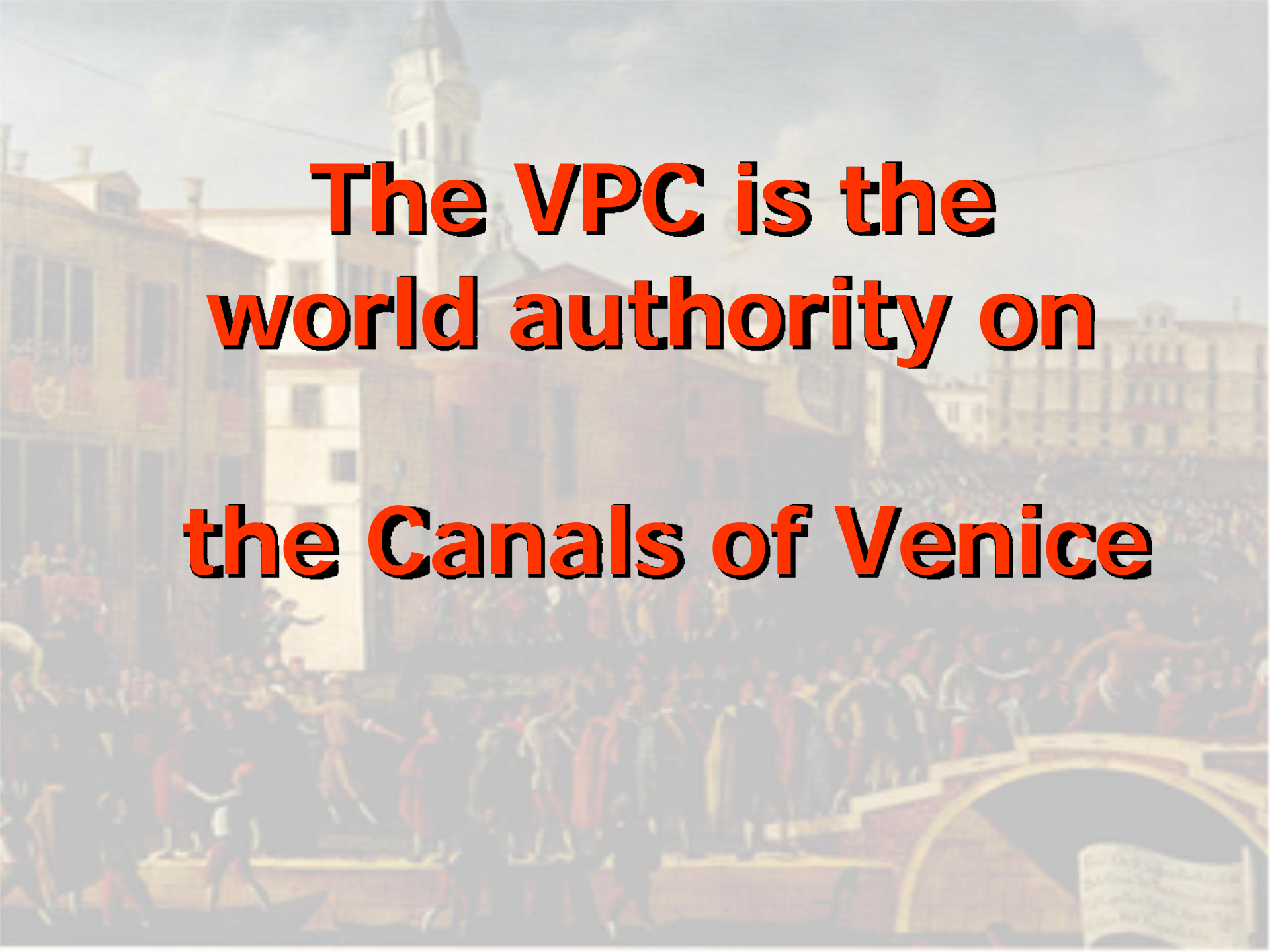
# Deliveries by zone



A historical painting depicting a bustling urban square. In the background, a tall church tower with a dome and a bell tower rises above the rooftops. The square is filled with a dense crowd of people, some on horseback, and a large banner is visible in the lower right. The scene is set in a city with multi-story buildings and a clear sky.

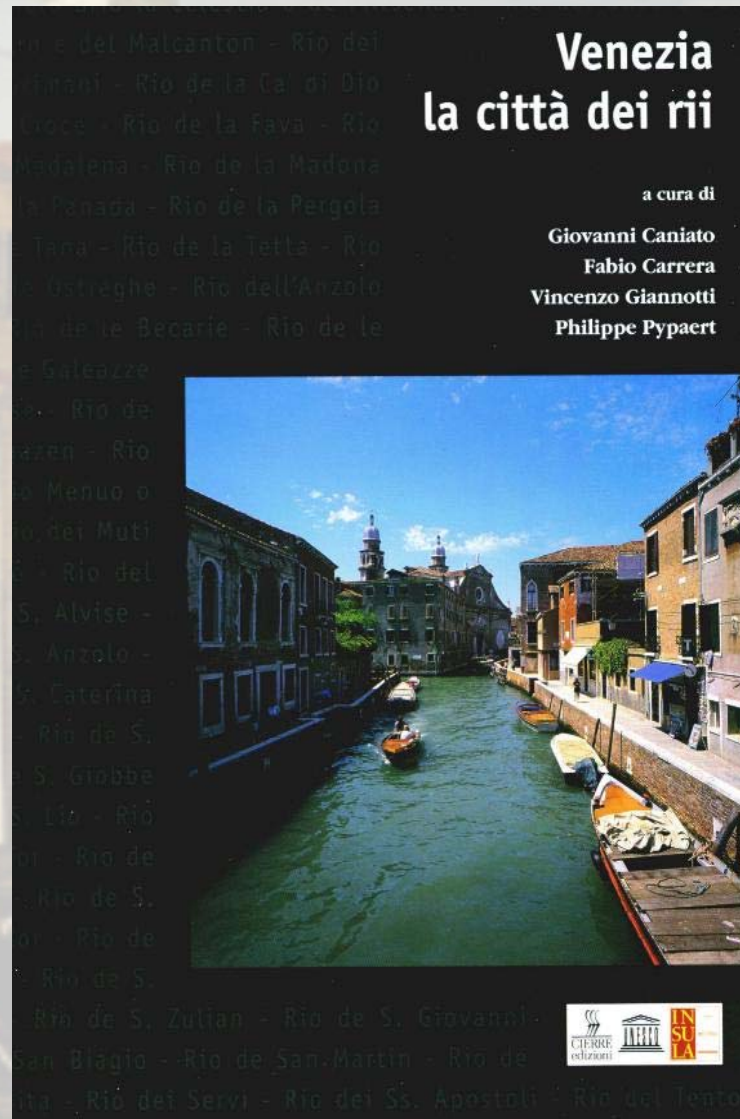
# Urban Maintenance



The background of the slide is a historical painting depicting a busy Venetian canal scene. In the foreground, a large crowd of people is gathered on a bridge or walkway, some appearing to be in a state of commotion or celebration. The middle ground shows a canal with several gondolas and other small boats. In the background, a prominent church with a tall, ornate bell tower stands against a pale sky. The overall style is characteristic of 18th-century Venetian painting, with a focus on architectural detail and human activity.

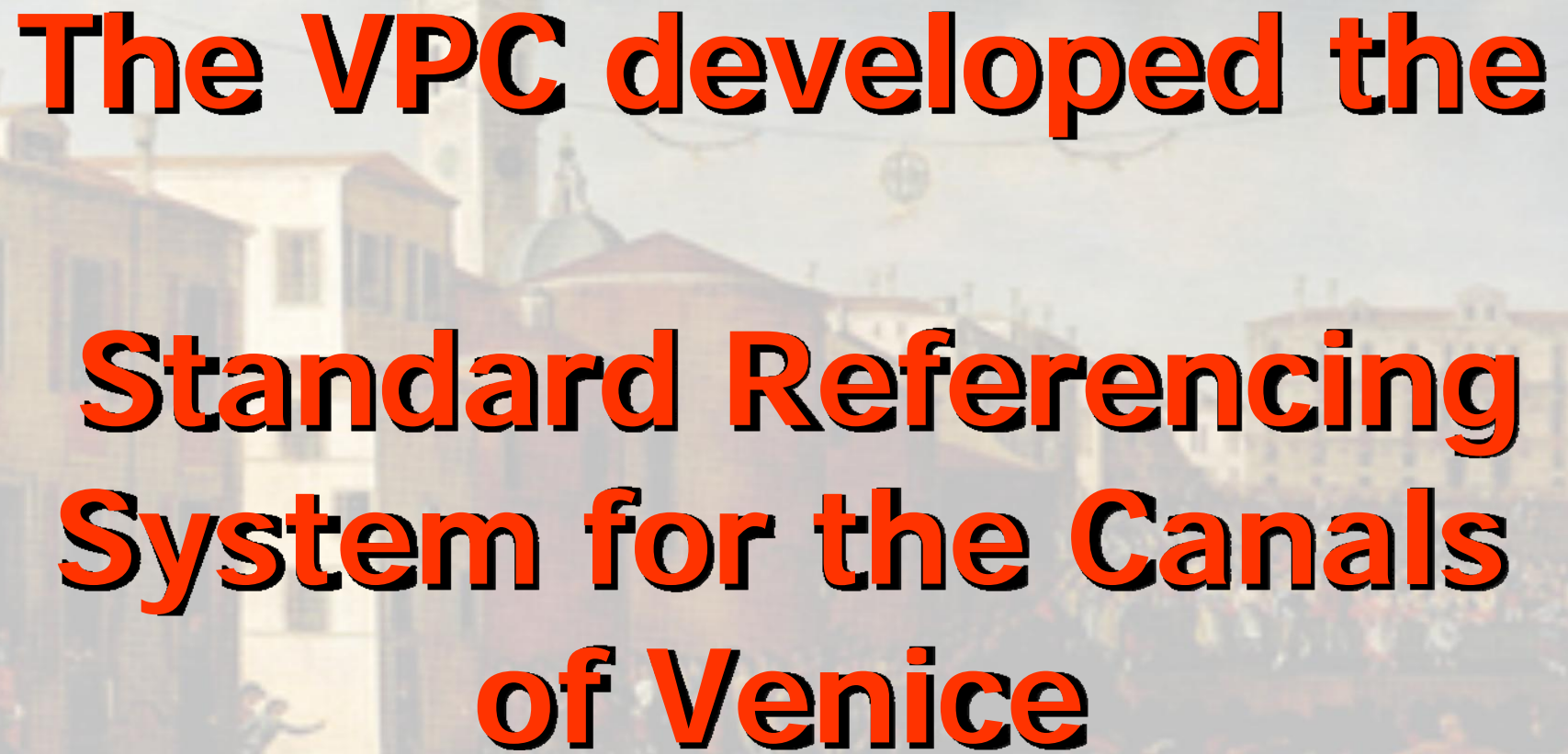
**The VPC is the  
world authority on  
the Canals of Venice**

# Major book on Canals



**1999**





**The VPC developed the  
Standard Referencing  
System for the Canals  
of Venice**

# Island Codes



MARZ

VEND

MADD

FOSC

FELI

MEGI

STAE

ZAND

ORIO

MOCE

2TOR

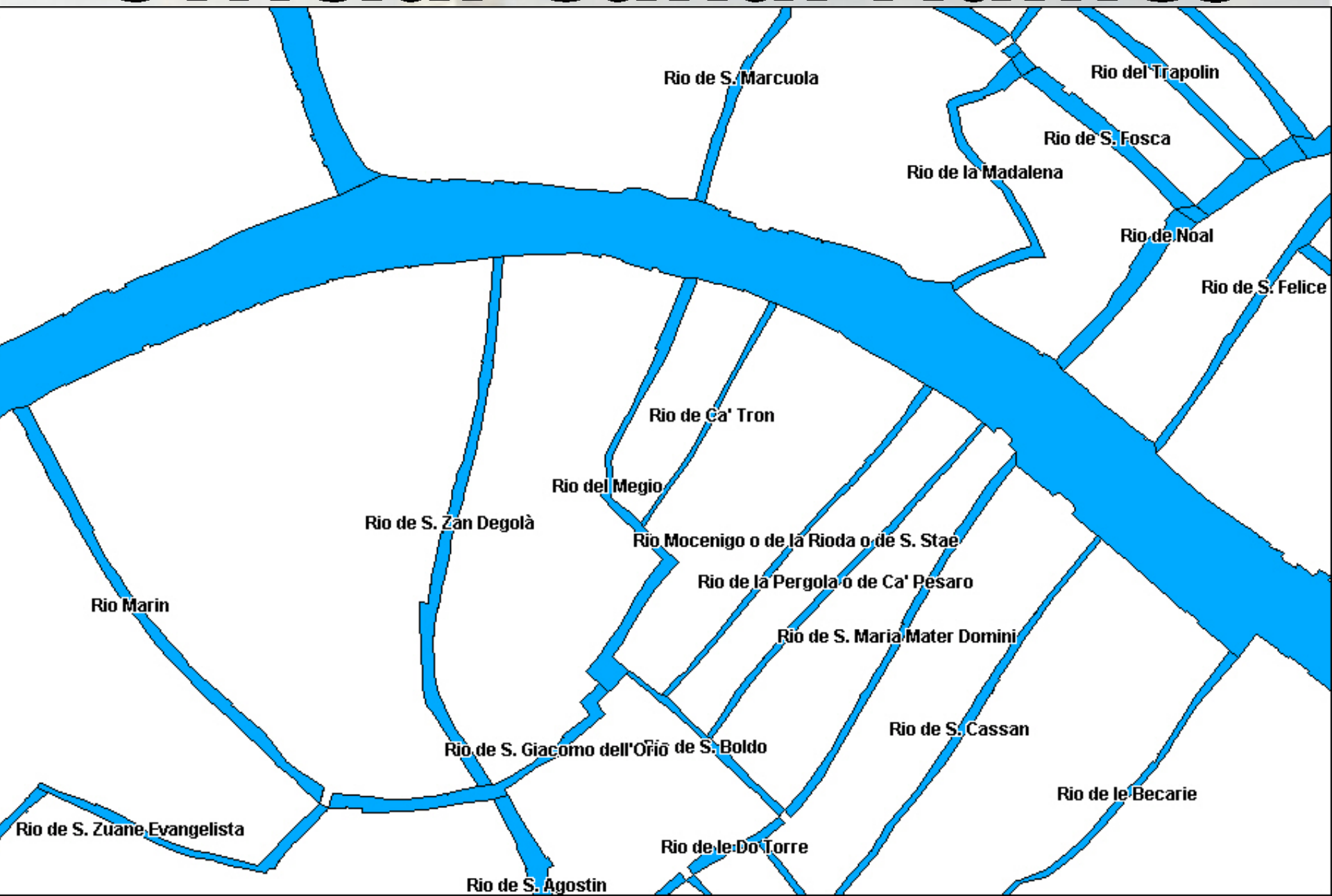
MATE

CASS

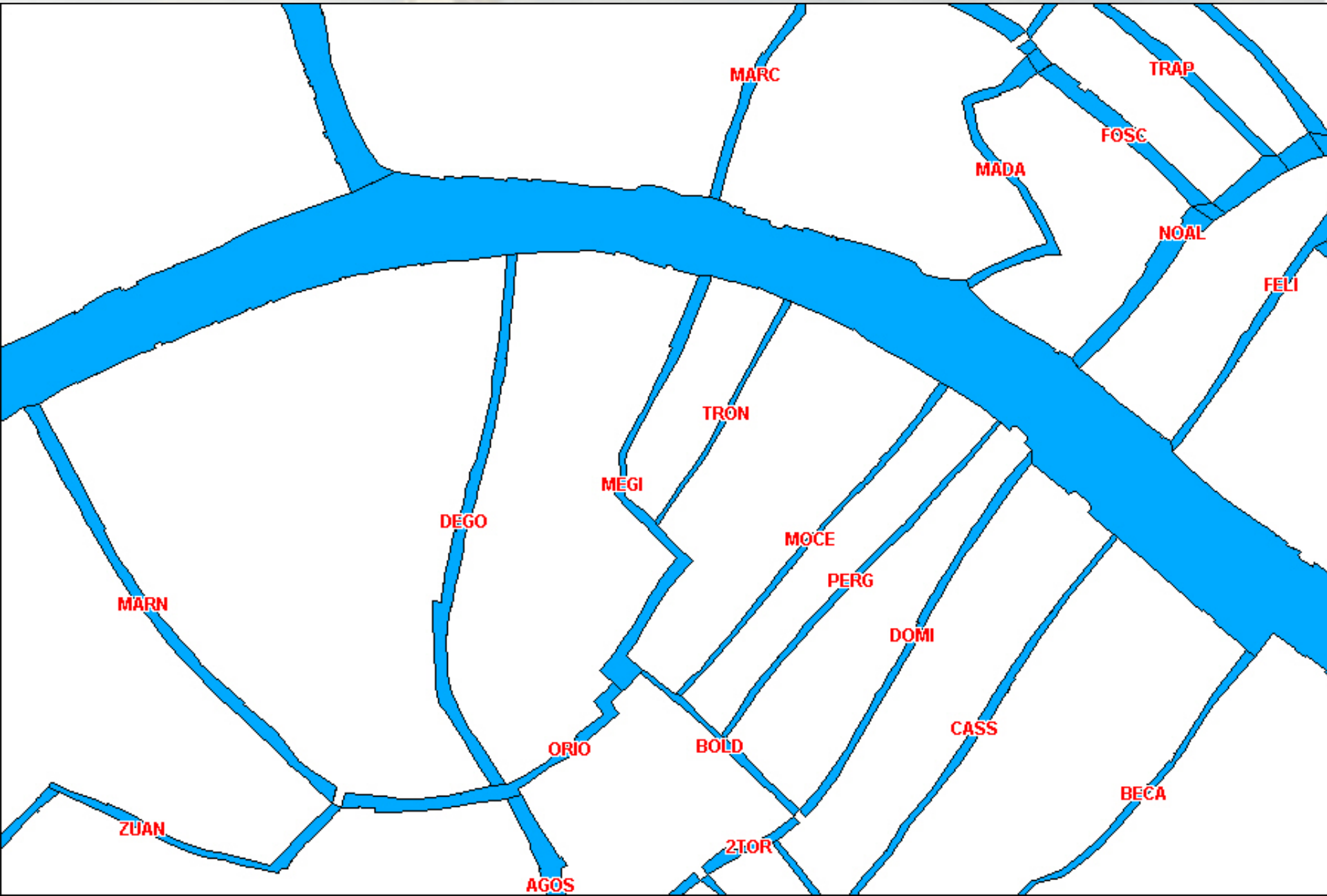
BOLD



# Official Canal Names

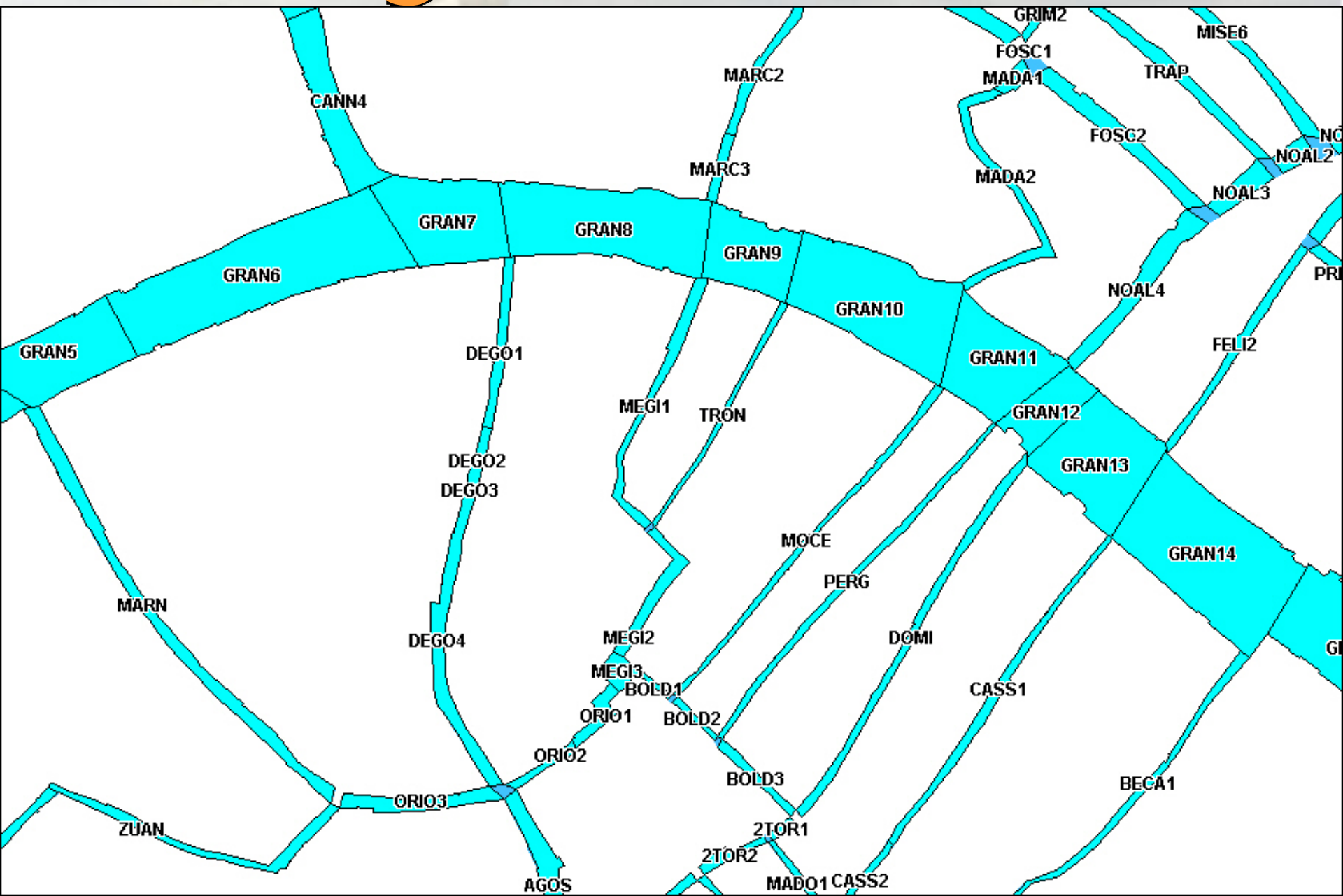


# Canal Codes





# Segment Codes



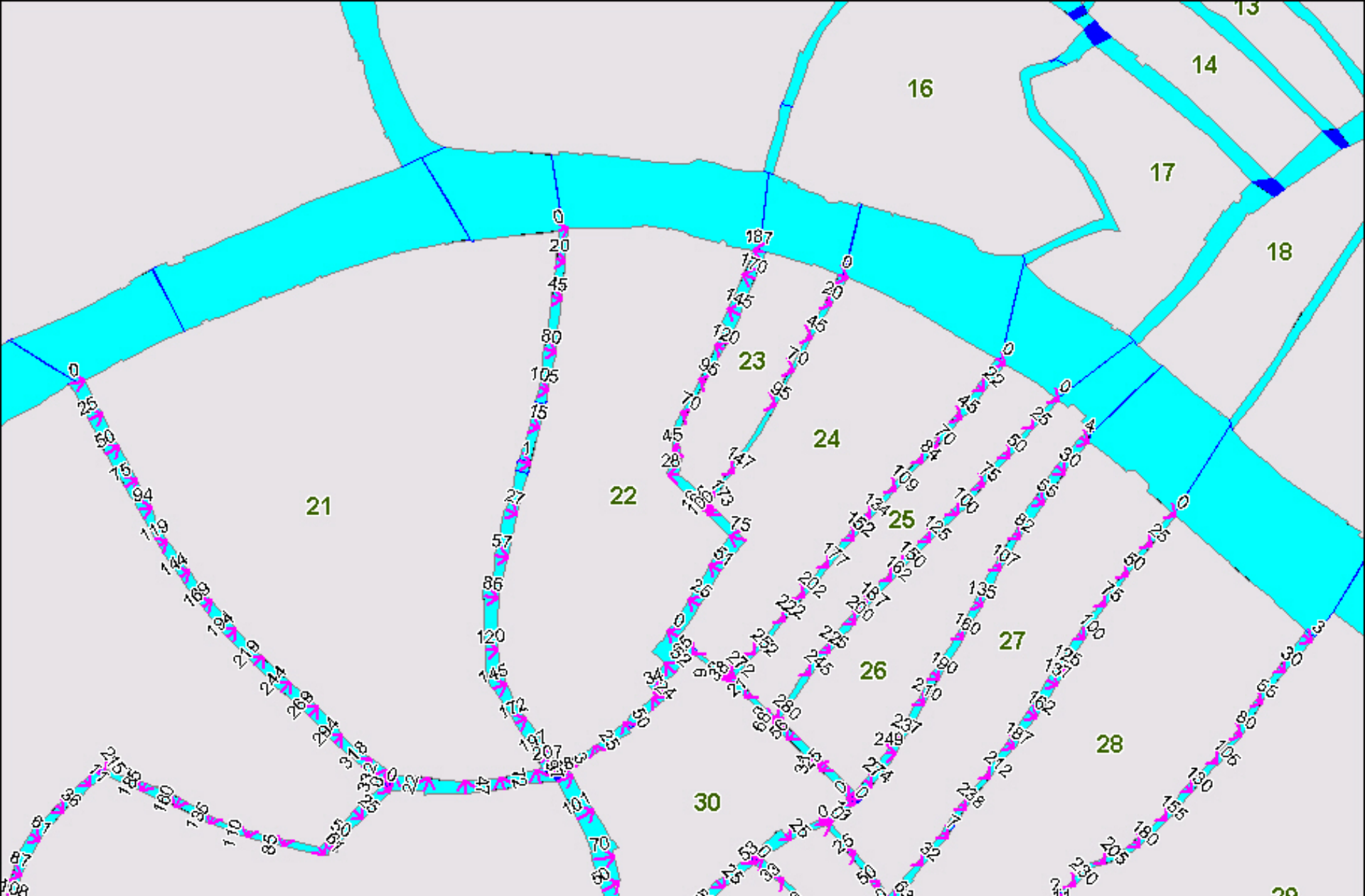


**The VPC jumpstarted**

**the resumption of  
canal dredging in  
Venice**

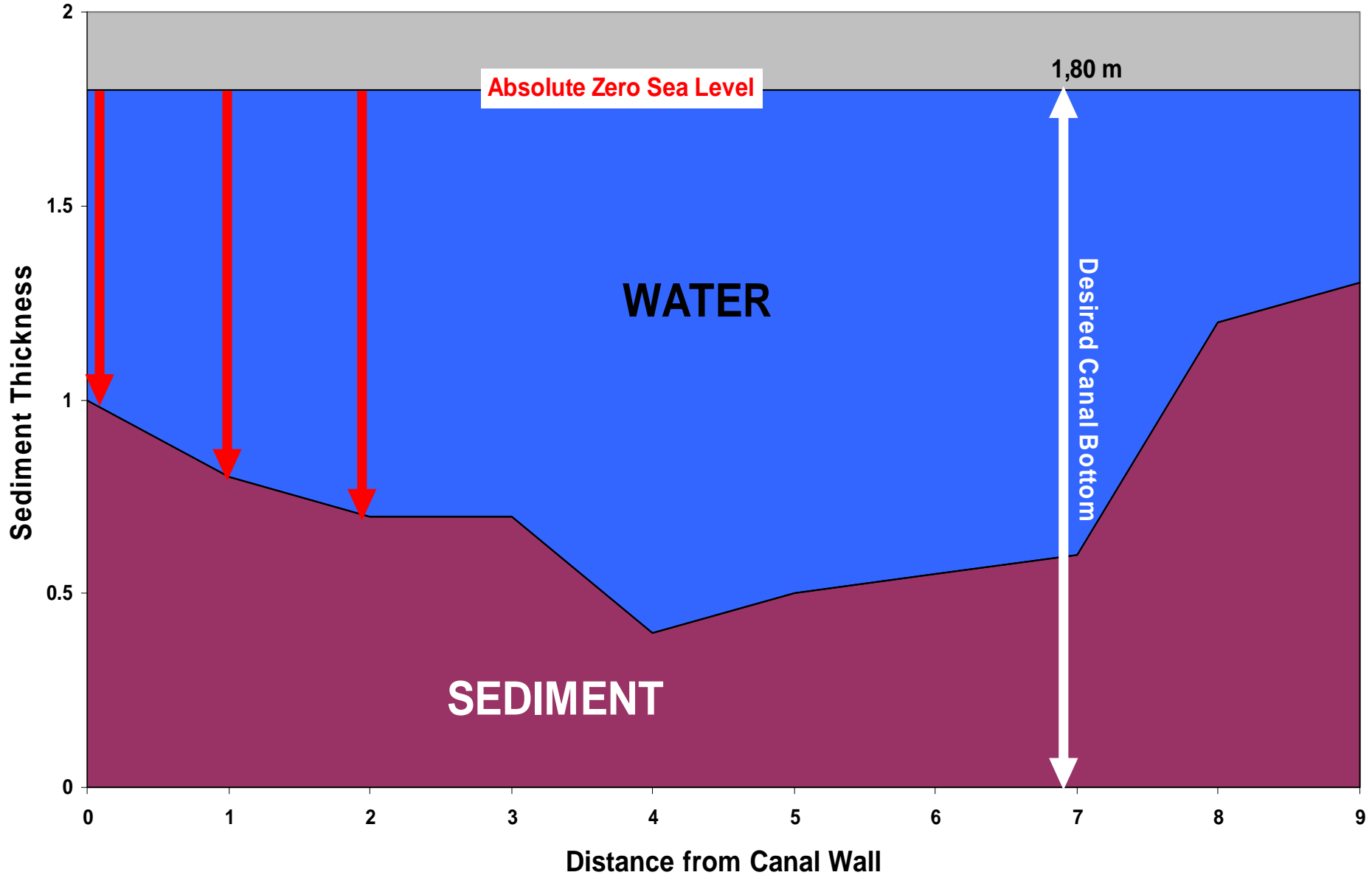
**(after a 30 year pause)**

# Canal Dimensions and Bathymetries





# Bathymetry for Section Design





The background of the slide is a historical painting depicting a bustling Venetian street scene. In the foreground, a large crowd of people is gathered, some on foot and some on horseback. A prominent figure in the center is riding a white horse. The street is lined with multi-story buildings, and a church with a tall, ornate bell tower is visible in the background. The overall atmosphere is one of a busy, public event or festival in a historical setting.

**The VPC made possible**  
**the repair of all**  
**Venice Bridges**  
**(after a 30 year pause)**



Informazioni Generali | Tabella | Selezioni | Stampa | Navigabilità | Manutenzione | Stampa Manutenzione

## Ultimo Restauro

Data Ultimo Restauro   
 Anni trascorsi   
 Riferimento Disegni

## Ponte Carlo Goldoni

Record: 14 di 465

## Ultima Rilevazione

Rilevazione Non Completa   
 Data   
 Ora

## Informazioni Generali

Nome Ponte **Ponte Carlo Goldoni** N. Ponte   
 Codice Ponte  Privato  N. Civico   
 Anno di Costruzione   
 Rio Attraversato  Codice Segmento

## Ubicazione

Sestiere N. Isola  
 Lato Nord    
 Lato Sud

## Informazioni Architettoniche

N. Campate  Stile Arco   
 Ponte Storto  Materiale

## Decorazioni Artistiche

Condizioni Decorazioni

## Rampe

N. Rampe  Corrimano Aggiuntivo   
 Larghezza Min.  m Accessibile agli Handicappati

## Gradini

N. Gradini Nord  Alzata  cm  
 N. Gradini Sud  Pedata  cm  
 Totale Gradini  Superficie (min.)  mq

## Spallette

Tipologia  Larghezza Est  cm  
 Larghezza Ovest  cm  
 Altezza Media  cm Larghezza Media  cm

## Sommità

Lunghezza  m  
 Larghezza  m  
 Larghezza fuori tutto  m

## Superfici

Superficie totale Gradini  mq Superficie su Mapinfo  mq  
 Superficie Sommità (basata su gradino minimo)  mq  
 Totale Superfici Misurate  mq **Stima Superficie Totale**  mq  
 (Media tra Mapinfo e Misurata)

## Spessori

	+2m Nord	+1m Nord	Centro Ponte	+1m Sud	+2m Sud
Spessore	<input type="text" value="63"/>	<input type="text" value="53"/>	<input type="text" value="49"/>	<input type="text" value="53"/>	<input type="text" value="60"/>

**Spessore Minimo**  cm

## Ingressi Privati

N. Numeri Civici

## Luce

Larghezza Rio  m  
 Sporgenza Nord  m  
 Sporgenza Sud  m  
**Luce Effettiva**  m

## Freccia

Livello Marea  m  
 Freccia Media  m  

	+1m Nord	Centro Ponte	+1m Sud
Freccia Misurata	<input type="text" value="2.79"/>	<input type="text" value="2.85"/>	<input type="text" value="2.79"/>

**Freccia Minima**  m  
 (rispetto a zero mareografico)

## Rapporto Luce/Freccia

**4.4**

Luce Effettiva  
 Freccia Minima

## Note

Servoscala per disabili

## Materiali e Condizioni

	Materiali	Condizioni
Pavimentazione Gradini	<input type="text" value="Trachite"/>	<input type="text" value="Buone"/>
Pavimentazione Sommità	<input type="text" value="Trachite"/>	<input type="text" value="Buone"/>
Alzate	<input type="text" value="Pietra d'Istria"/>	<input type="text" value="Medie"/>
Spallette	<input type="text" value="Metallo"/>	<input type="text" value="Buone"/>

**Condizioni GENERALI**

**Buone**

Ponte | Rampa



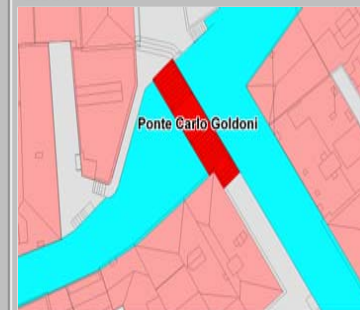
Scegli

Cancela

Vista d'insieme



Zoom



**Indice Automatico**  
**100**  
 (max = 100)

# Ponte del Lago Scuro

**Tipologia di Intervento**  
**Restauro**

Codice Ponte **SCURO**

Record: 1 di 465

Ilum. Ponte **430**

## DEGRADO LEGGERO

**67** (max = 141)

## DEGRADO GRAVE

**24** (max = 75)

## DISSESTO

**17** (max = 63)

	Degrado Lapideo	Degrado Intonaco	Degrado Muratura	Bolle Pavimentazione	Sconnessioni	Usura	Ruggine	Distacchi Materiale	Vegetazione	Degrado Giunti	Rotture	Rotazioni	Buche	Fuoriuscite	Variazioni Geometriche	Corrosione	Fessure Long. e Trasz.	Distacco Muro da Arco o Spalletta	Cedimenti	Fessure Aperte Reti-colari	TOT	
<b>Armill Est</b>	3						3	2	0	0	3	0		0							1	12
<b>Armill Ovest</b>	3						3	2	0	0	3	0		0							1	12
<b>Arco</b>			3				3	3	0		3				0			3		0	0	15
<b>Muro Andatore Est</b>		3	2				3	0	0		3				0				0	0	0	11
<b>Muro Andatore Ovest</b>		3	2				3	3	0		0				0				0	0	0	11
<b>Spalletta Est</b>	3	3	0				0	0	0		3	0							0		3	12
<b>Spalletta Ovest</b>	3	3	0				0	0	0		3	3							0		3	12
<b>Piano di Calpestio</b>					2	3	0	3	0				0					3		0		11
<b>Alzate</b>						3	0	0	0		3	0			3			3		0		12
<b>Pilastri di Fondazione</b>																						0
<b>TOTALE</b>	<b>12</b>	<b>12</b>	<b>7</b>		<b>2</b>	<b>6</b>	<b>15</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>21</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>		<b>9</b>	<b>0</b>	<b>0</b>	<b>8</b>		

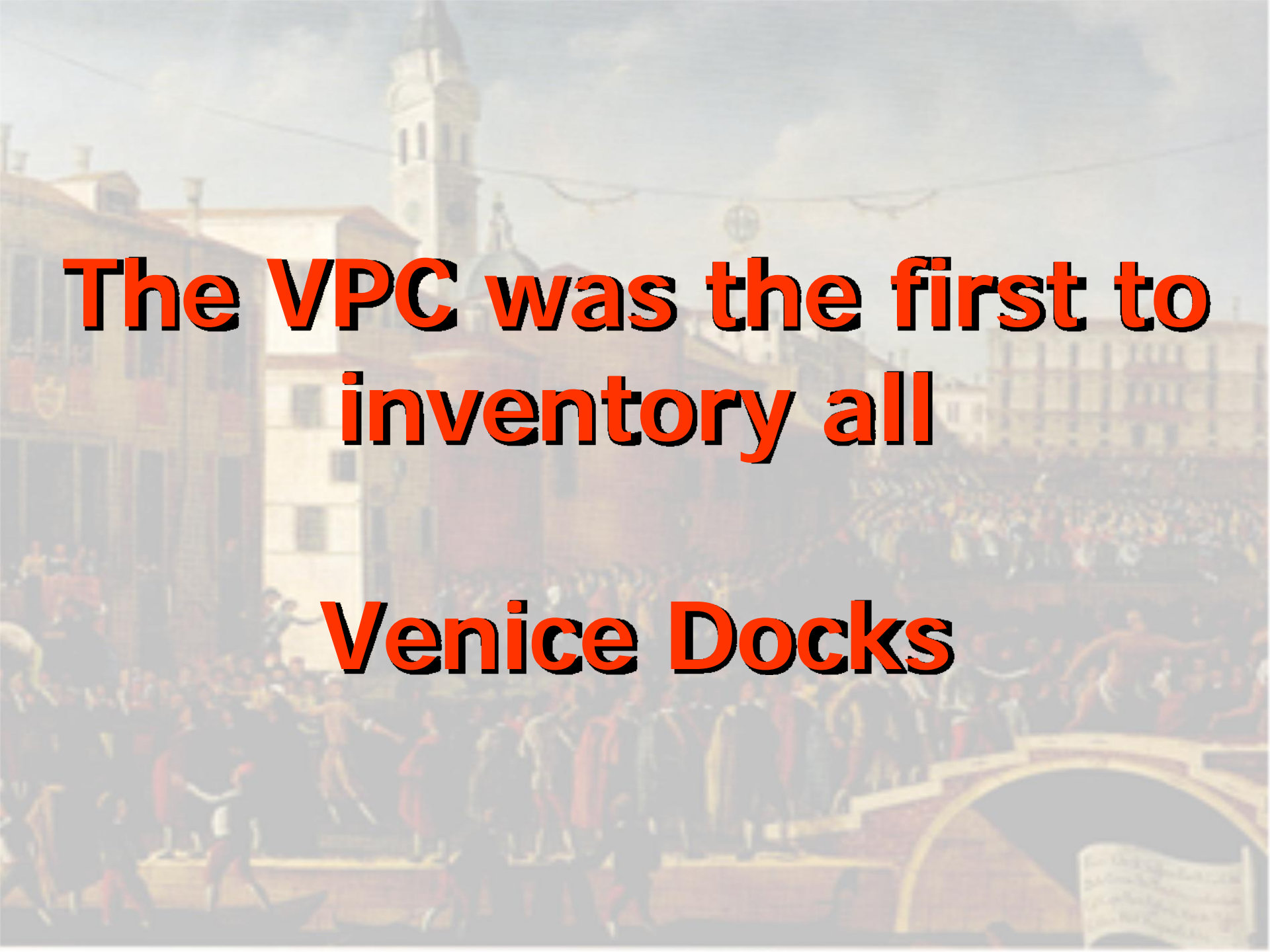
**Note** Ponte in cemento armato e graniglia.

**Legenda**  
 ENTITA: 0 = Assente; 1 = Presenza Isolata; 2 = Presenza Media; 3 = Presenza Diffusa

**Aggiornamenti**

Data Rilevazione: 3/14/00

**Nuova Rilevazione**    **Cancel-la Rilevazione**

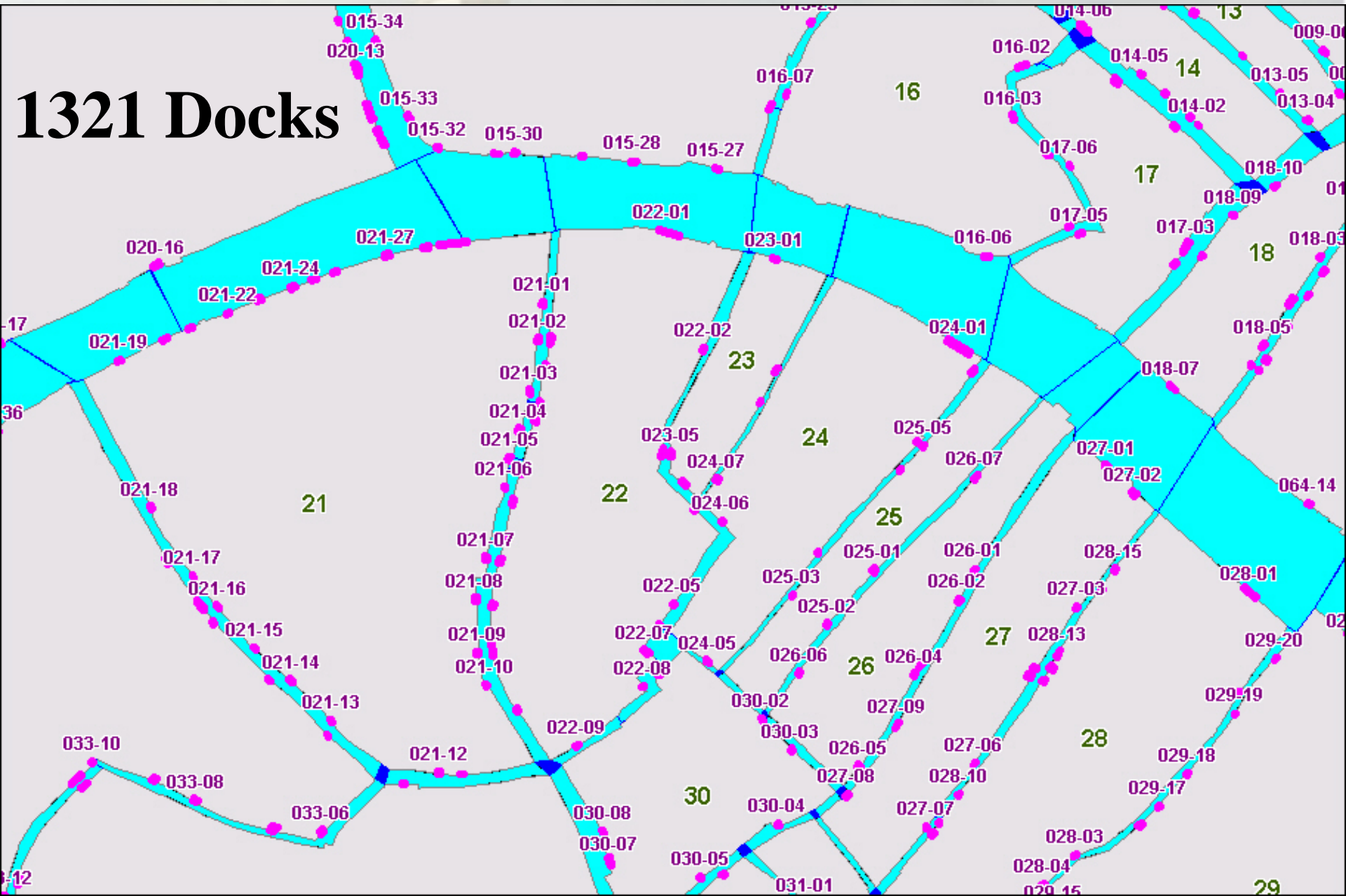
The background of the slide is a historical painting depicting a bustling street scene in Venice. In the foreground, a large, diverse crowd of people is gathered, some appearing to be in a public square or market. A prominent church tower with a dome and a spire rises in the background, partially obscured by the text. The overall atmosphere is one of a significant public event or festival.

**The VPC was the first to  
inventory all  
Venice Docks**



# Boat Docks

1321 Docks



File Cartografia Seleziona Trova Impostazioni



Zoom: 283 m

Mostra dati Mostra Mappa

Rive di approdo Fondamenta Pontili Porte d'Acqua

Singola

Trova

064-09

Codice Riva

Isola Santi Apostoli

Rio SS. Apostoli

( Segmento APOS4 o N° Nodo )

Sestiere o Località

Cannaregio

Data Rilevamento 20/02/98

Riva: 1 di 7

Isola

Codice Isola APOS N° Isola 64 N° Progressivo 9 N° Isola 12

Rio

Nome Rio Rio SS. Apostoli Codice Segmento APOS4 Su Nodo

Nodo Nord 365 Distanza da Nodo Nord 214 m Larghezza Rio 10 m

Tipologia

Tipo Approdo Perpendicolare con piattaforma aggettante

Condizioni Generali

Buone

Dimensioni

Estensione Manufatto 5,15 m Profondità Manufatto 2,2 m Sporgenza o Rientro -2,2 m

Ingombri

Lunghezza Utile Barca in Ormeggio 15 m Larghezza Minima di Scarico 5,15 m

Utilizzo

Utilizzabilità Utilizzabile

Destinazione d'Uso

Scalini/Piattaforme

N° Scalini 9

N° Scalini Utilizzabili 4

Piattaforme n° 2

Attrezzature

Sovrastrutture

Sovrastrutture  Parapetto Cancello  Cancello Apribile 

Pali

N° Pali 0

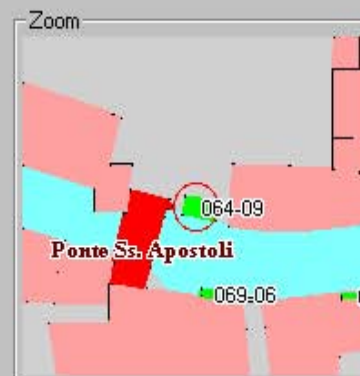
Condizioni Pali

Anelli o Ganci

N° Anelli Presenti 2 N° Anelli Mancanti 0 N° Ganci o Chiodi 0

Condizioni Anelli Buone Materiale Anelli Acciaio

Note



Nuova Rilevazione

Inserisci Foto

Elimina Foto

Scheda

Selezione

Stampa

Archivio Storico

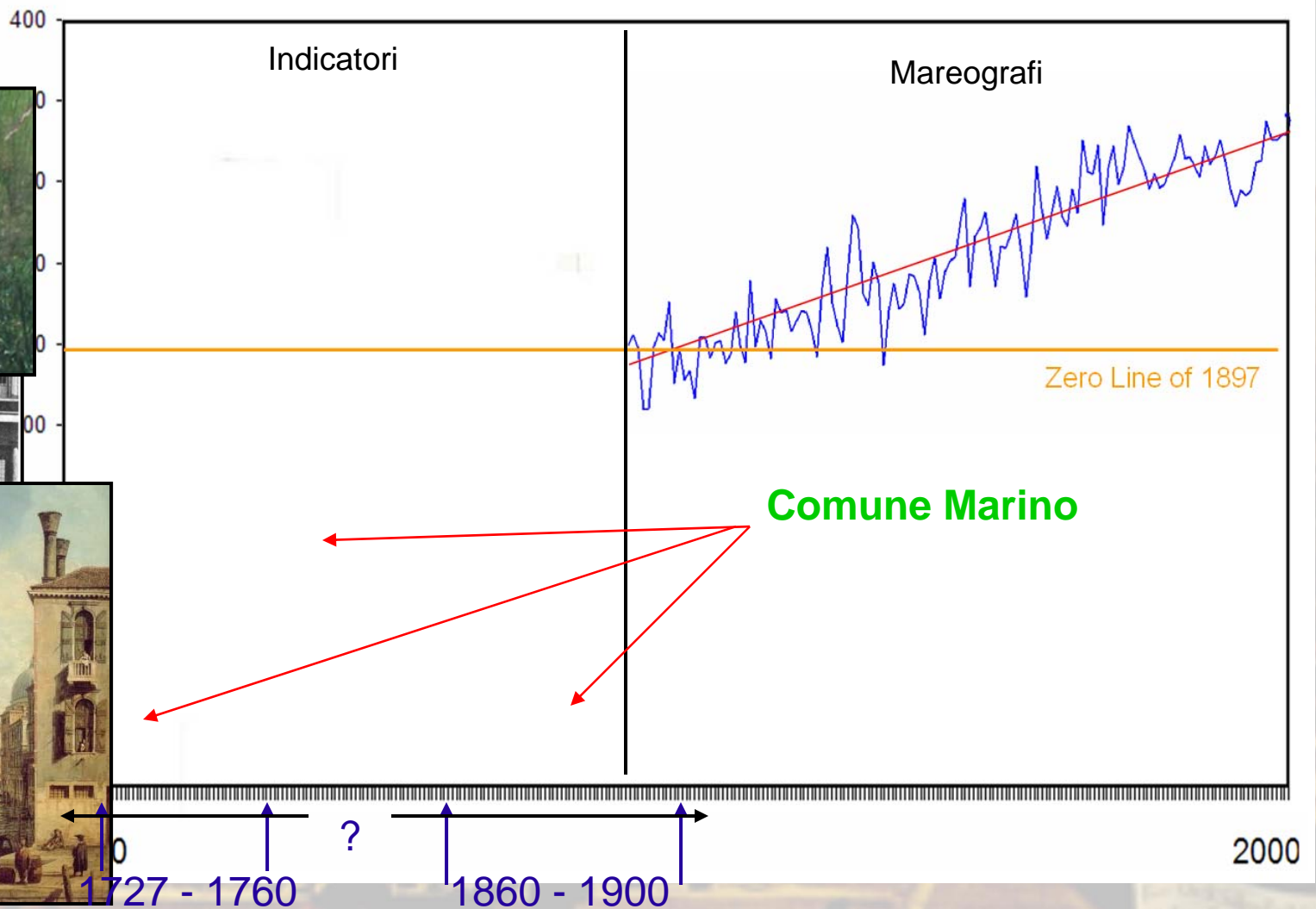


A historical painting depicting a crowded street festival in a European town. The scene is filled with people in various activities, including dancing and socializing. In the background, a prominent church tower with a dome and a bell tower rises above the buildings. The architecture is multi-story with windows and balconies. A banner hangs across the street, and a small bridge or archway is visible in the lower right. The overall atmosphere is one of a busy, communal event.

# Miscellaneous



# Measuring Sea-Level Change



# Belltowers and the Sounds of Venice





# Traditional Boats



Boat Drive-in Presentation-Summer 2005



# Fabio Carrera

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