

AAPA
CRUISE CONFERENCE

**Cruise Ship Newbuilding Trends
&
Changes in Store for Ports and
Cruise Terminals**

San Diego
Presented by
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February 9, 2006
CH2M HILL

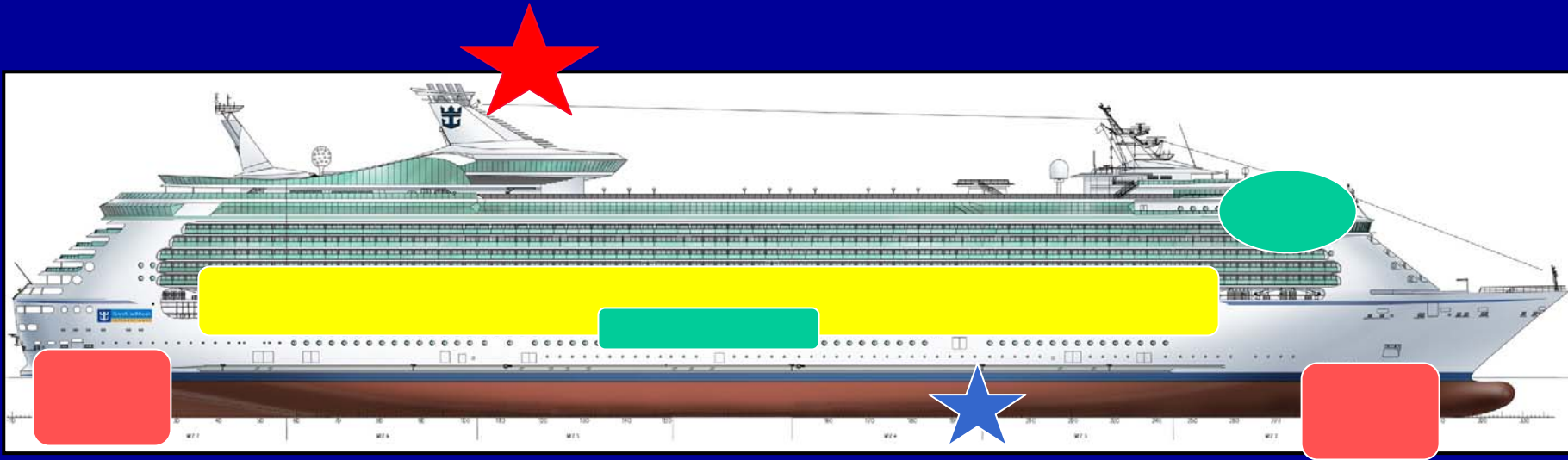
Presentation Outline

- **Ship Trends**
- **Issues for Existing Terminals**
- **Terminal Design Trends**
- **Passenger Access Issues**
- **Summary**

General Cruise Ship Design Trends

- **Longer & Wider**
- **Deeper Draft**
- **Larger Aircraft**
- **More Capacity**
- **More Balconies & Amenities**

Physical Trends in Cruise Ship Layout

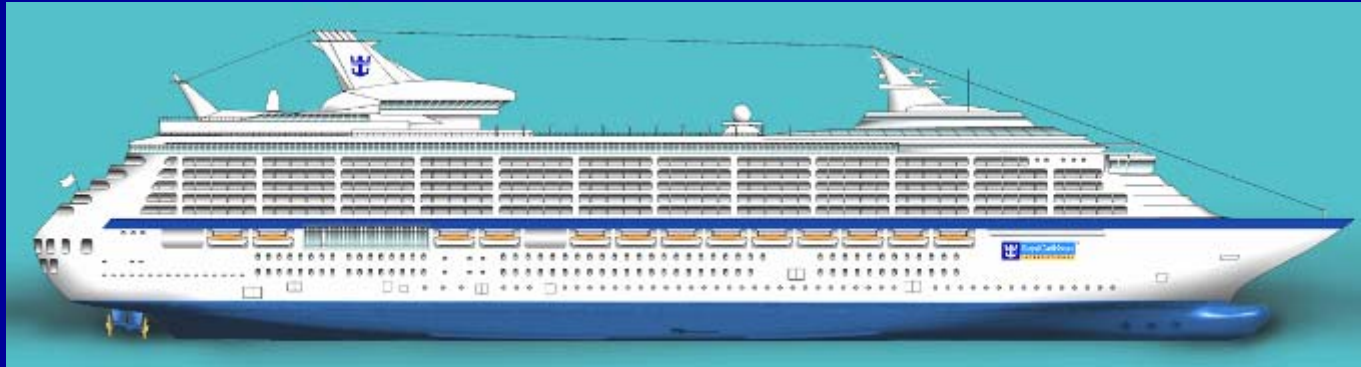


- Deeper Draft
- More Overhanging Structures
- Life Boats Overhanging Hull
- Multiple Main PAX doors
- More Powerful Maneuvering Systems

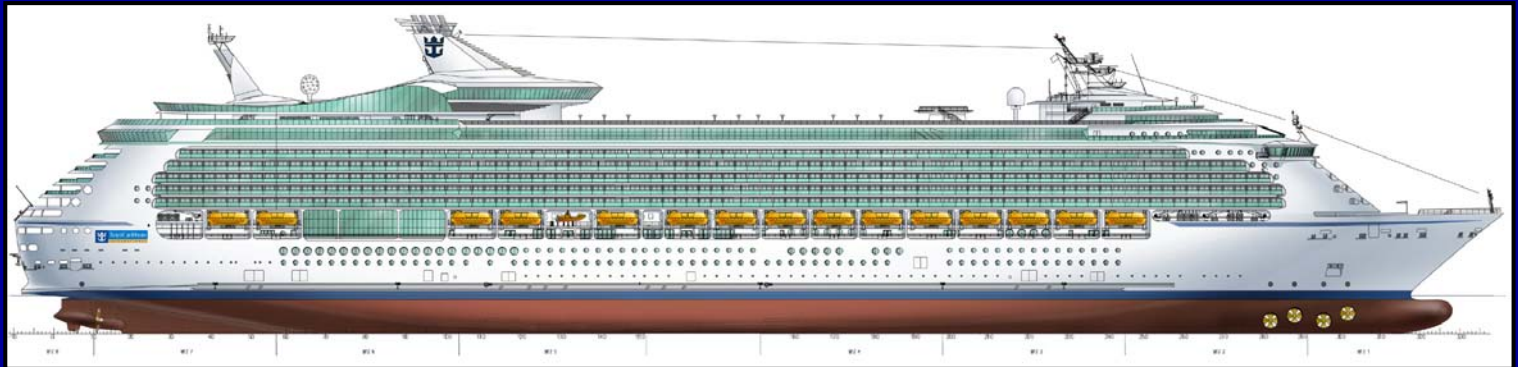
Carnival
Destiny



Voyager



Freedom



Freedom about 15% bigger than Voyager

Freedom of the Seas



Flow Rider

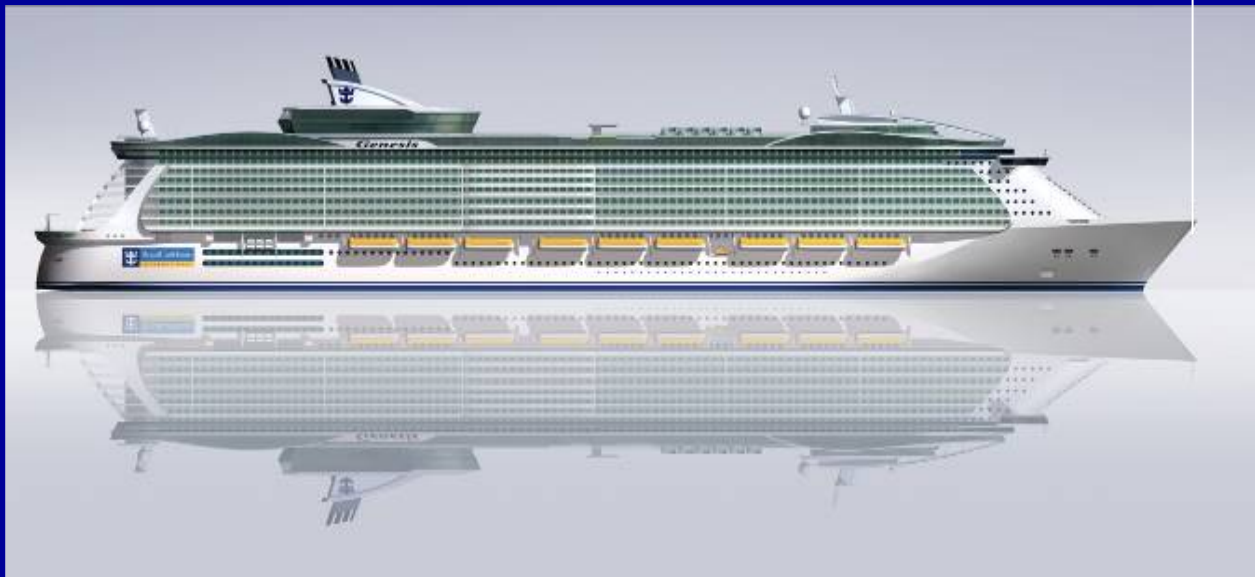
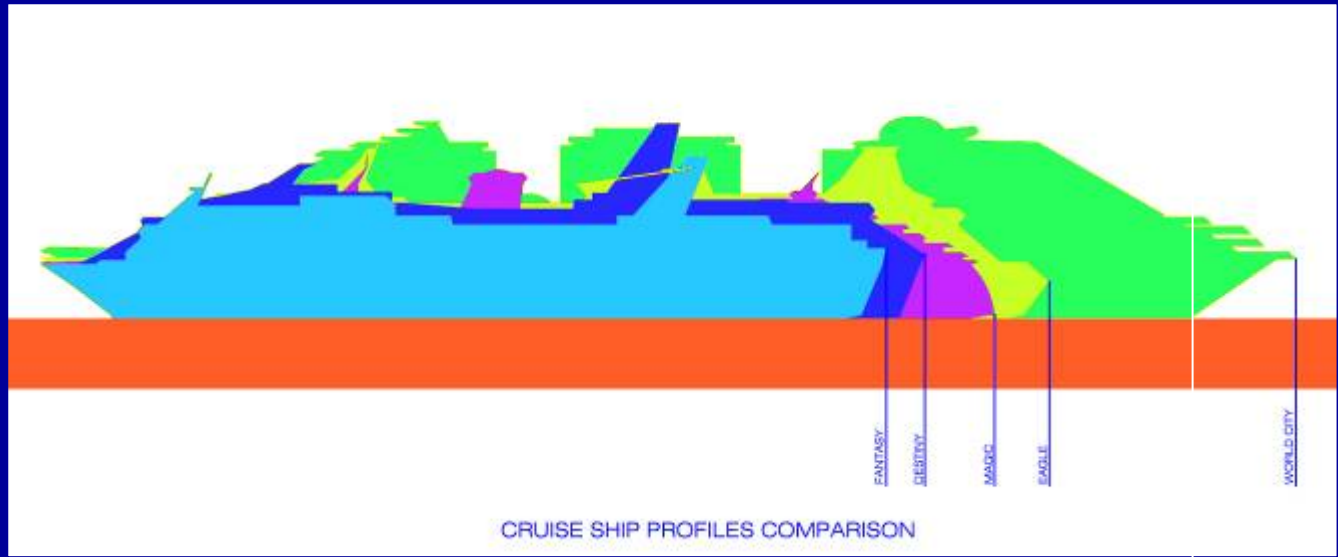


Even Bigger – RCI Project Genesis

- *220,000 Gross Tons - a Quarter Mile Long, 240 ft high, 6,200 Guests - 2,400 Staff -- a "Floating City"*



Cruise Ship Profile Comparison



Cruise Terminal

Cruise Ship Design & Accommodation Guidelines

New Cruise Ships will tend toward....

- **LOA 1200 ft +++**
- **Beam at Water Line – 160 ft**
- **Beam over all – 220 ft**
- **Draft - 32 ft ++**
- **Air Draft – 240 ft**
- **Life Boats outside hull**
- **Gross Tonnage – 220,000**

By Comparison

- **World City**
 - **LOA – 1268 ft**
 - **Beam at water line – 172 ft**
 - **Life Boats outside hull – 245 ft**
 - **Gross Tonnage – 250,000**

Terminal Design Trends

Passenger Terminal

- More footprint
- More parking
- More gangways
- More Stand off distance from berth
- Urban CT even more \$\$\$ now

Berth

- Sturdier structures – lateral and deadload (more 150T bollards)
- Survivability for Cat 5
- Larger VSZ areas
- More areas for vessel stores staging
- Sour Protection issues

Waterside

- Wider Channels
- Larger Turning Circle

Terminal Design Trends

Urban

- **San Diego – Lane Field Mixed Use CT**
- **New Orleans**

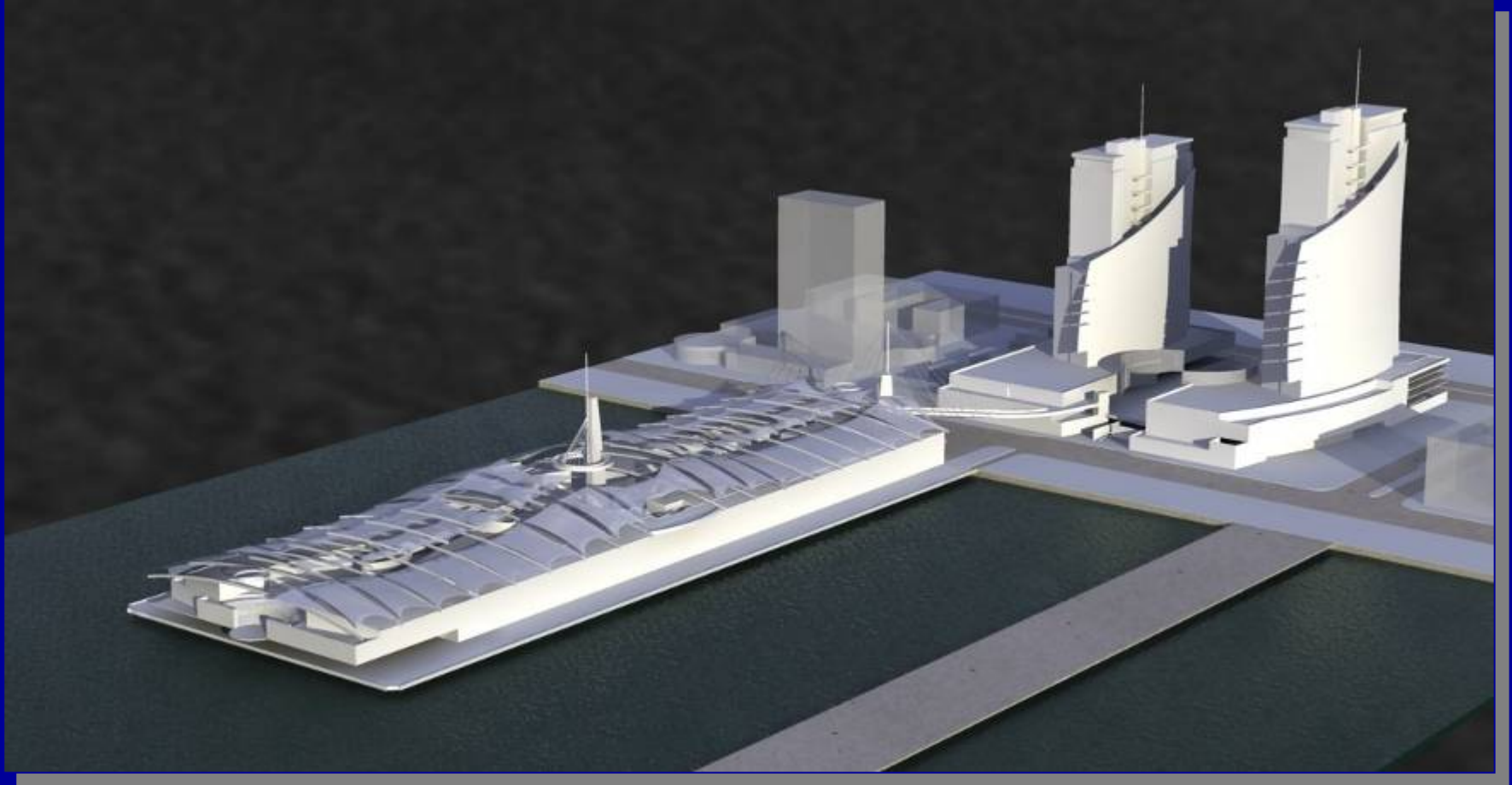
Greenfield

- **Port of Houston – Bayport**
- **Jacksonville**

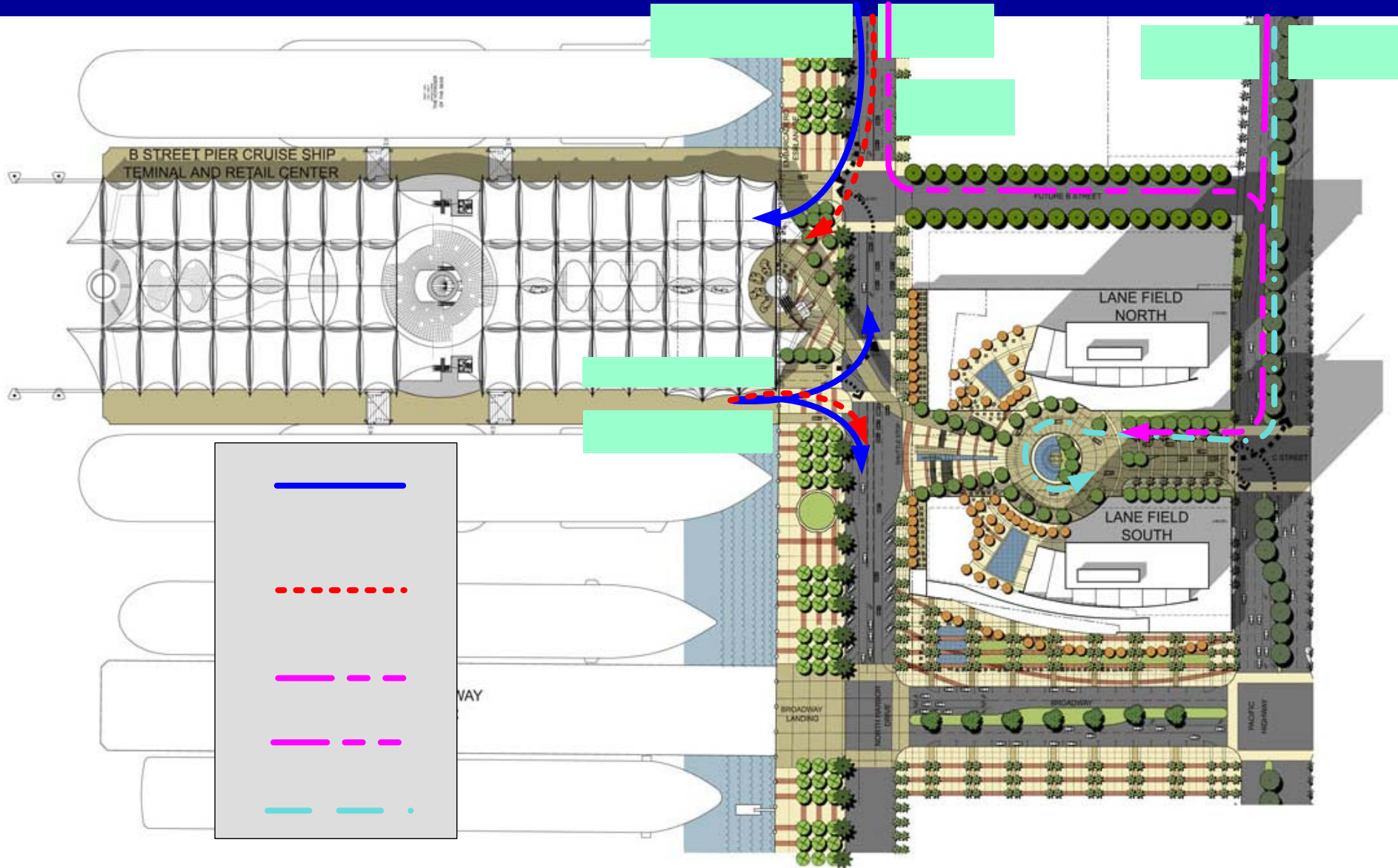
San Diego Cruise Terminal



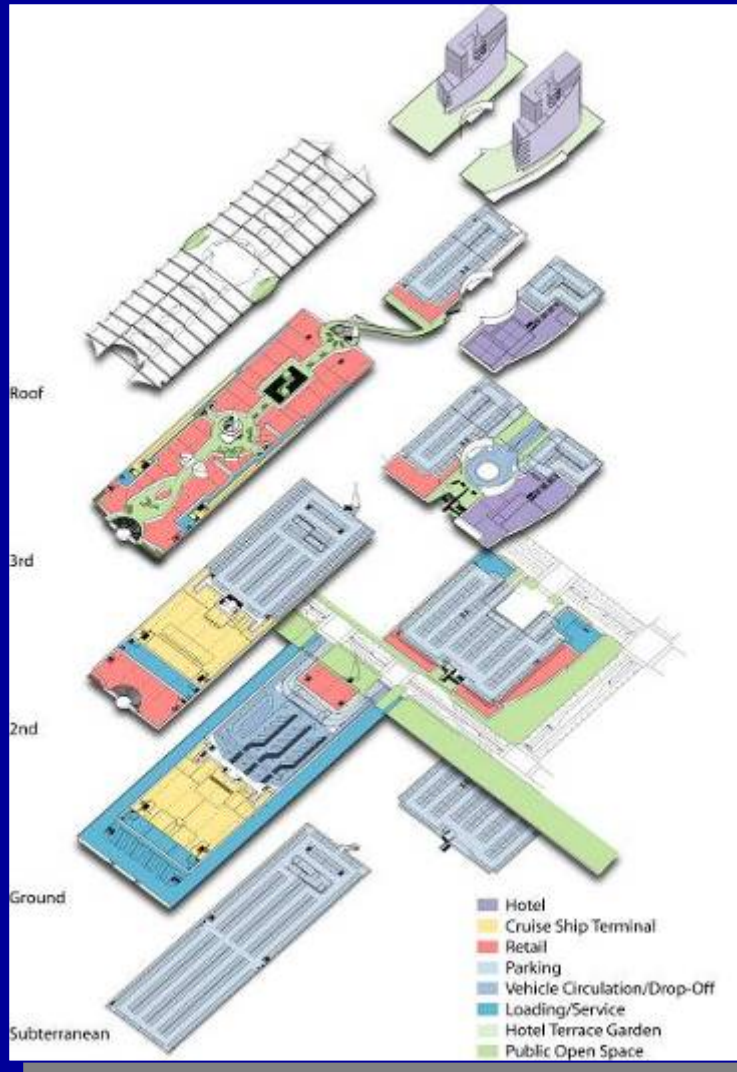
Development of Lane Field, B Street Cruise Ship Terminal and Adjacent Properties



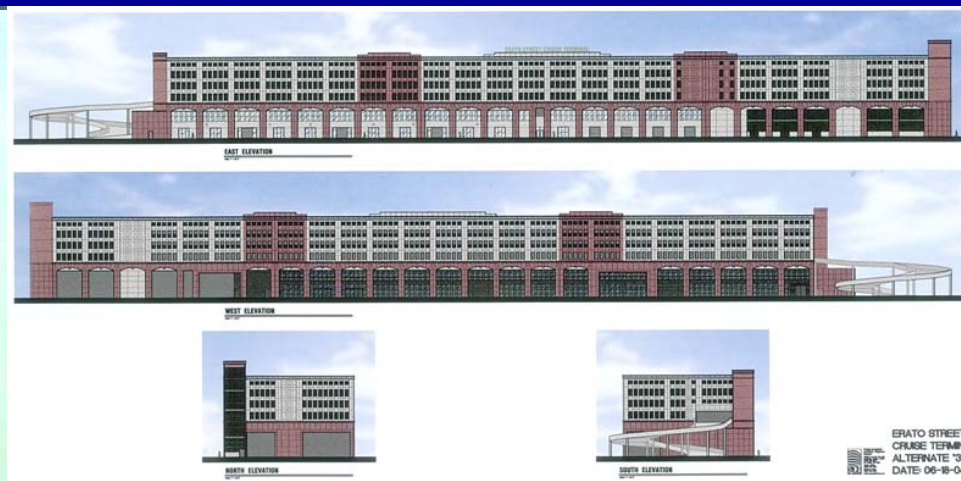
Site Plan



Functional Massing



Erato Street Terminal



Port of New Orleans – Erato Street CT



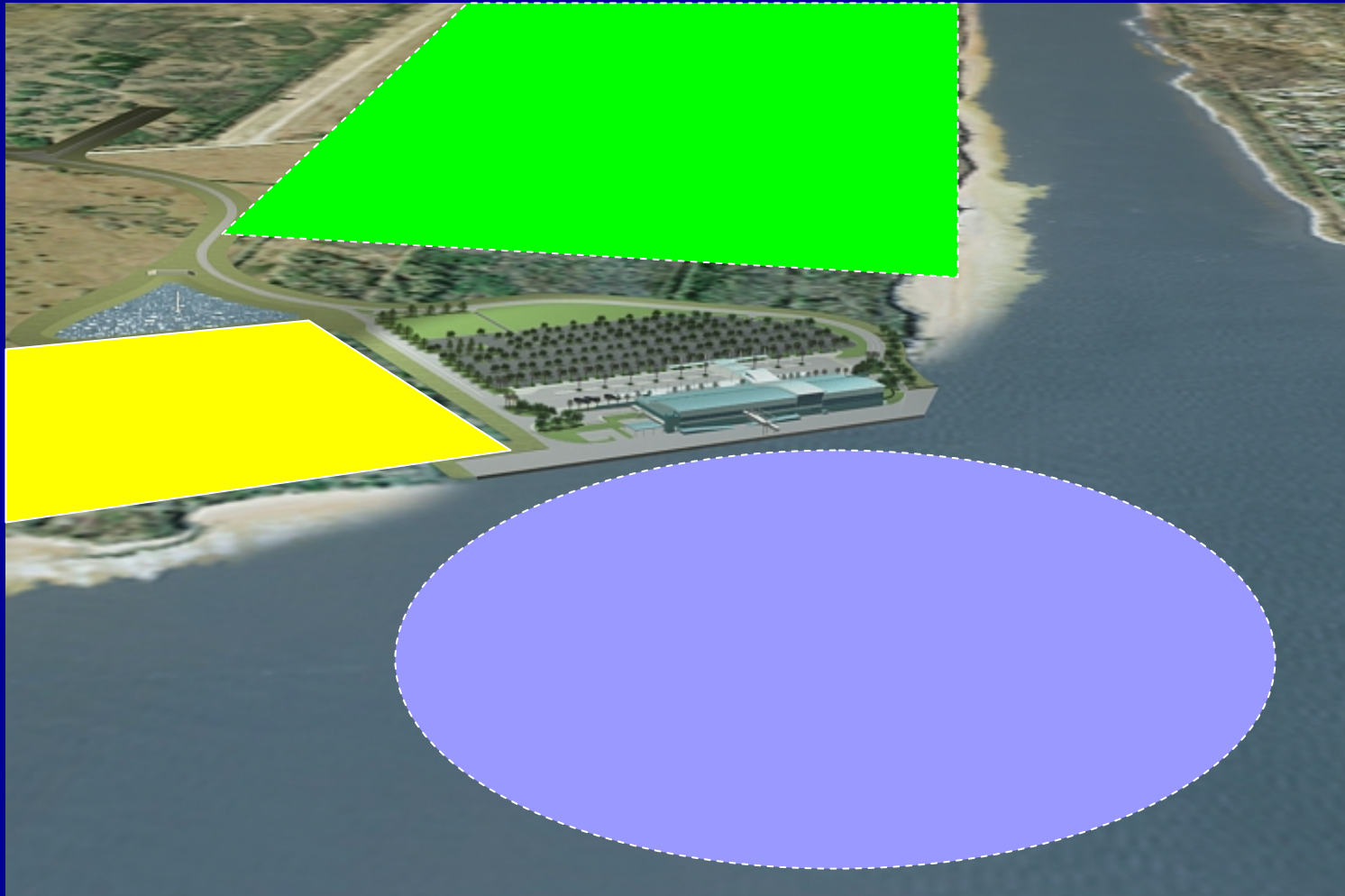
Port of Houston Bayport Cruise Terminal

- **Greenfield Cruise Terminal Development**

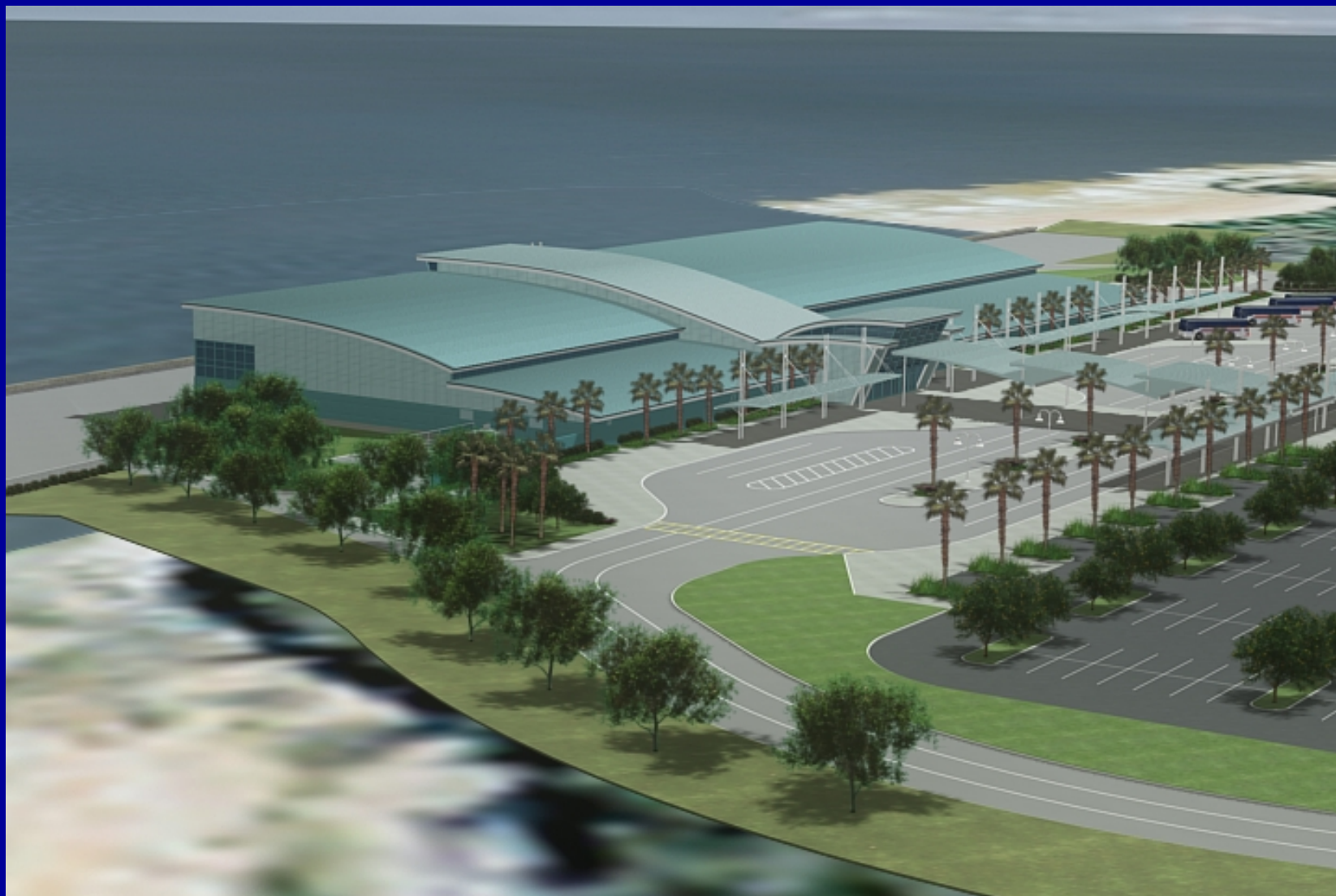


**Port of Houston
Bayport Cruise Terminal**

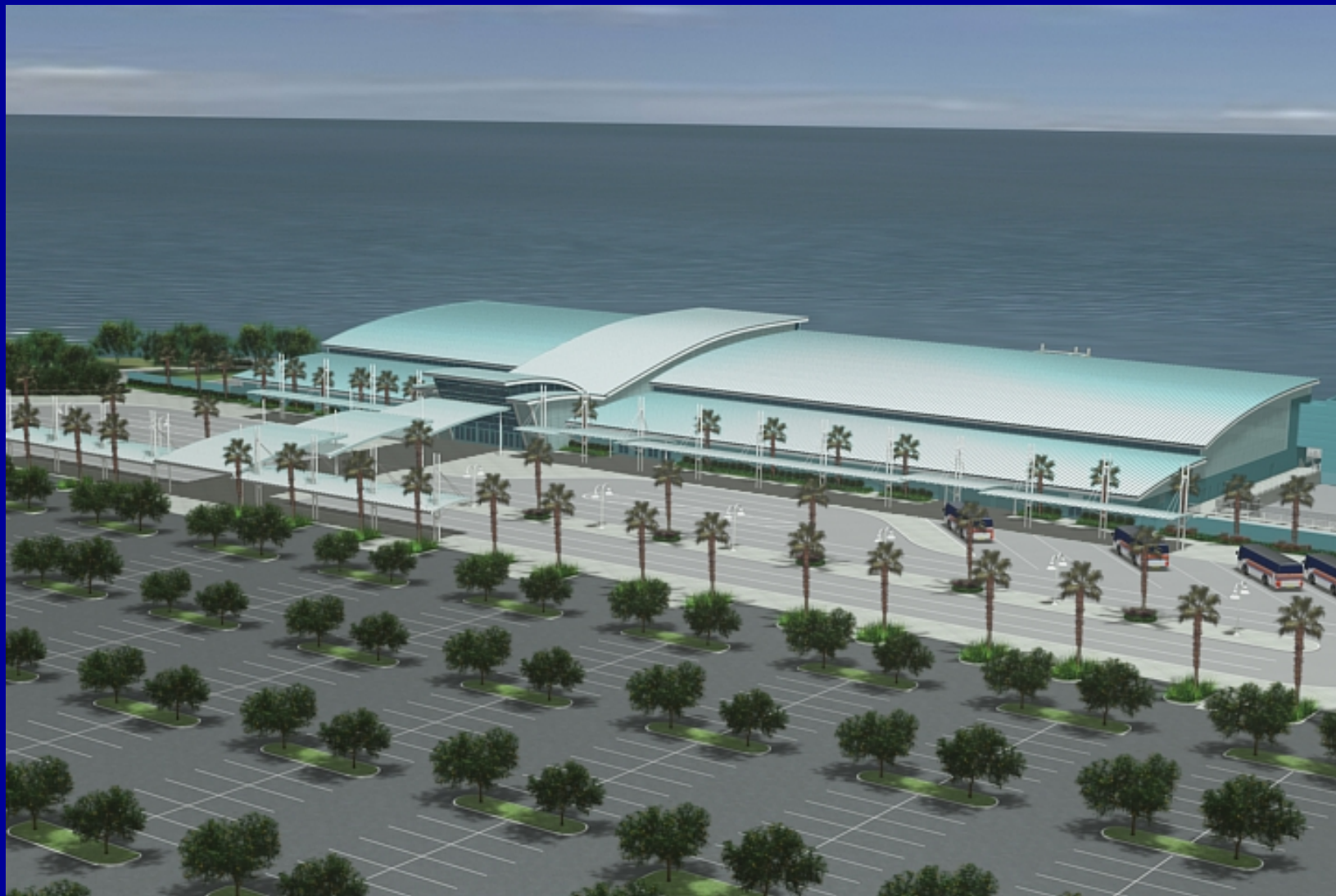
Greenfield Cruise Terminal Development



Port of Houston



Port of Houston



Jacksonville Cruise Terminal



Passenger Access Trends

- **Multiple Units to handle passenger volumes**
- **ASAD – Capable**
- **Higher Capacity per hour (now 600-900/hour)**
- **Higher live loads on berth**
- **Innovation in Airport systems will spill over to Cruise Terminals**
- **More Expensive**

Cruise Terminal of the Future Wish List

- **Fully Automatic Customs/Immigration Processing**
- **Standardized Main PAX Location on Cruise Ship Fleet**
- **Ship Based Passenger Access System**
- **1 Hour Ship Clearance Capability from Ship to Terminal**
- **Fast Claim System for Luggage**
- **Container Based Vessel Stores System**

Summary

- **As Ships get Bigger, Terminals must Adapt to New Physical and Operational Issues**
- **Ship Berths must get Larger and Sturdier**
- **More Private Destinations will be Built to Enhance the Passenger Experience and Include Revenue for Lines**
- **More Home Ports in Caribbean and Gulf of Mexico**

Thanks !

Effects of New Ships on Existing Terminals

New Cruise Ships will tend toward....

- **LOA 1270 ft**
- **Beam at Water Line – 140 ft**
- **Beam over all – 200 ft**
- **Draft 32 ft**
- **Life Boats outside hull**
- **Gross Tonnage – 200,000**

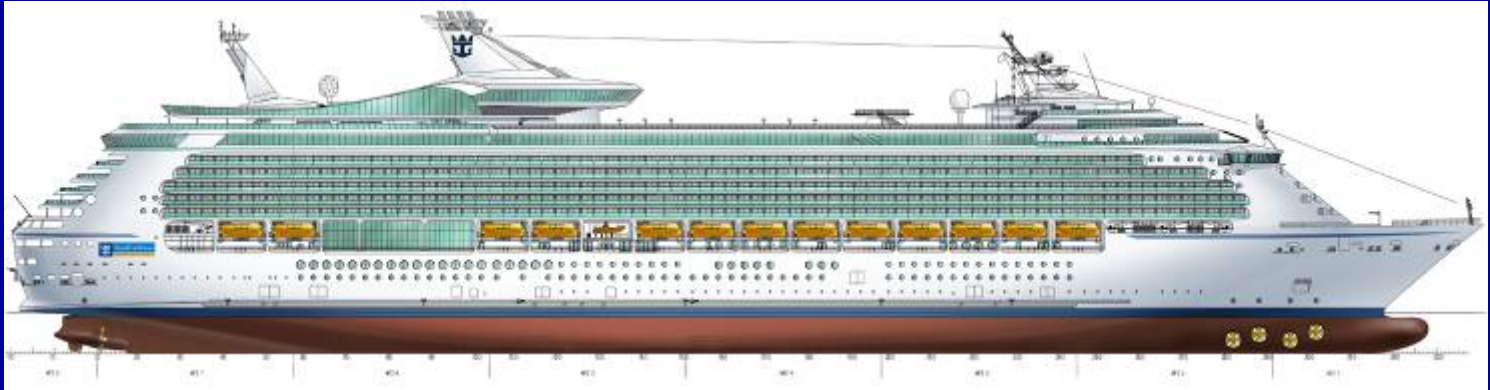
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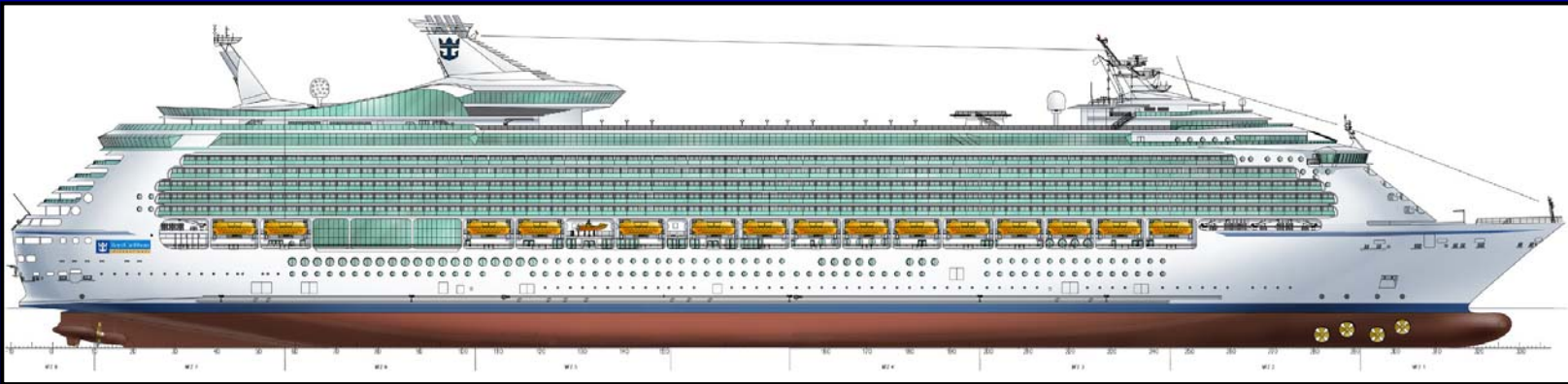
Cruise Ship Innovation - Bigger gets Bigger

Megas become Ultra Megs

Voyager



Freedom
(Ultra Voyager)
May 2006



About 15% larger than Voyager