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TECHNICAL SPECIFICATION

CMS DEVELOPMENT
SUBSCRIBER MANAGEMENT
CORPORATE WEBSITE DEVELOPMENT

Waterborne Energy Inc.
Dec 2007

TECHNICAL SPECIFICATION APPROVALS

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1 Executive Overview

1.1 Introduction

This document details the architectural design for the Waterborne Energy technical improvements project. The application is to allow for entry, search, updating, and metric reporting of information in the system. The application shall be accessed by authorized users and report subscribers to aid in the reporting & tracking of LNG & LPG shipments. The application is also designed to streamline the information entry & report generation/distribution processes and enable web content updates via a proprietary content management system (CMS).

1.2 Functional Description

The focus of this document is to address the development process, Website content implementation, and execution recommended for the successful completion of Waterborne's new corporate and subscriber Websites. This includes all steps that will be utilized during the design and programming phases. The system is a web-based application that connects to a Microsoft SQL Server. The primary programming languages shall be ASP .NET C# and SQL. The application shall allow users to interface with the system's database via a web browser. Access to the administration section(s) requires user validation and authentication.

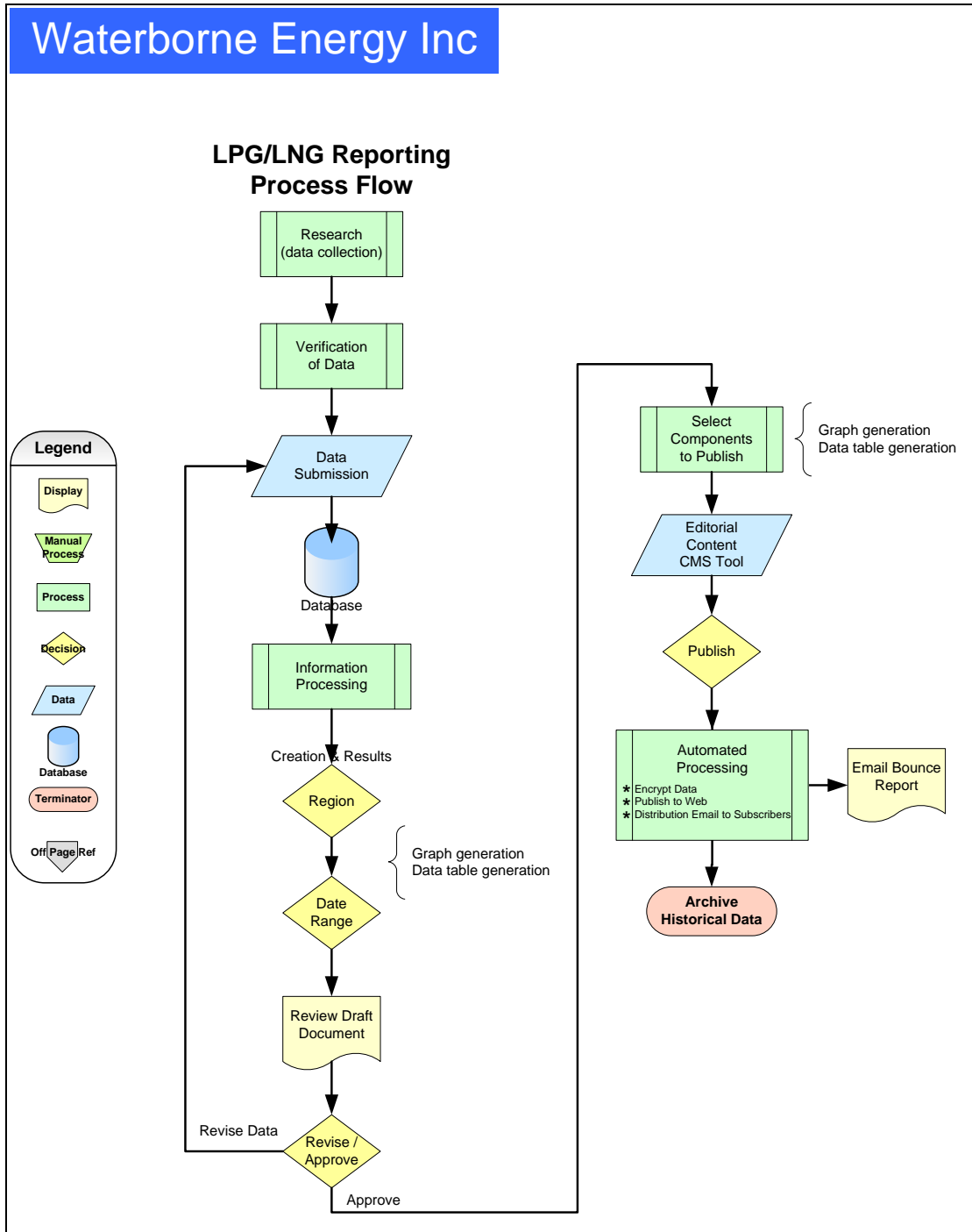
1.3 Reference Documents

The following documents are relevant to this design specification:

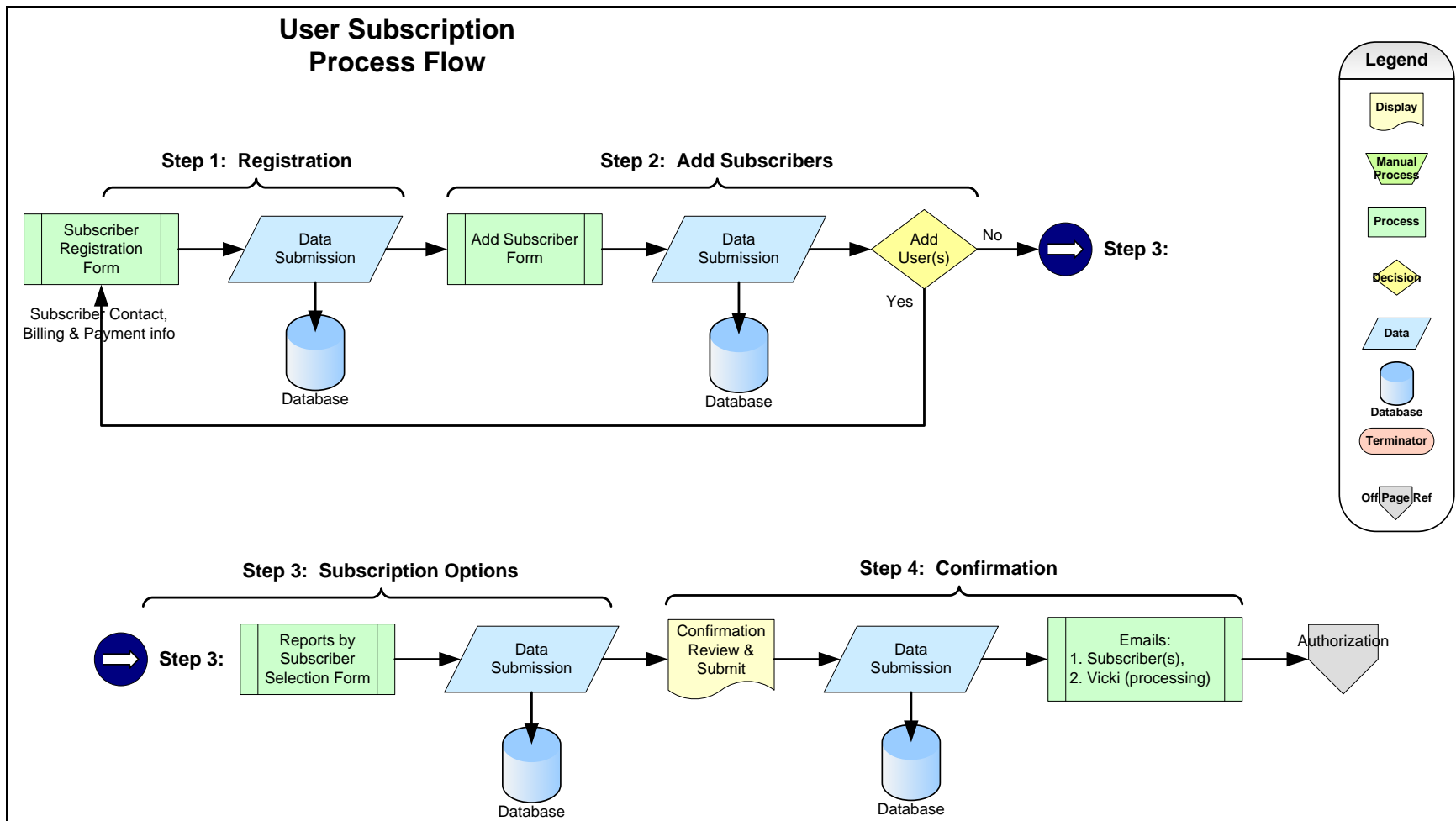
- Technical Improvements (Waterborne Proposal_v6.pdf)
- Discovery Document (Waterborne Process Flow.pdf)
- The Waterborne LPG Report (09 February 2007)
- The European Waterborne LNG Report (Vol. 2, No. 15, 02 Feb 2007)
- The Asian Waterborne LNG Report (Vol. 1, Week 6, 09 Feb 2007)
- The U.S. Waterborne LNG Report (Vol. 4, Week 8, 23 Feb 2007)
- Functional Specification Waterborne v 01.00.07.doc (May 2007)
- Corporate (public) Website Wireframe (waterborne_wireframe_v111 with comments. PDF)
- LPG Portal Wireframe (waterborne_portal_v9_LPG final with comments. PDF)
- LNG Portal Wireframe (waterborne_portal_sitemap_v1_LNG.pdf)
- Administration Wireframe (Waterborne_admin_wireframes_v1.pdf)

2 Control Flow Charts

2.1 High-Level Data Flow



Subscription Process Flow Char)



Public Web Site Control Flow (Site map)

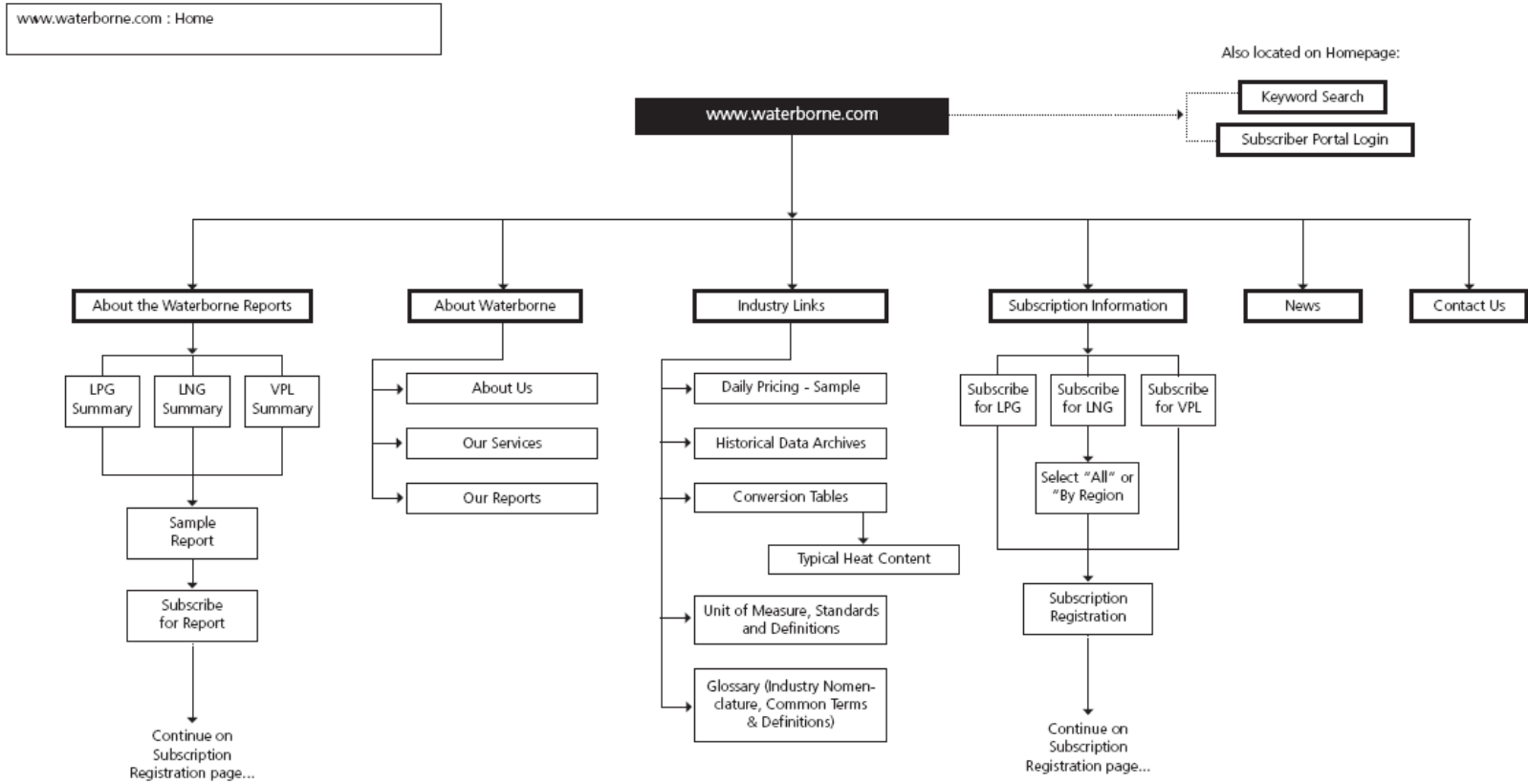


Figure 1: Waterborne Public Diagram

LPG Portal Web Site Control Flow (Site map)

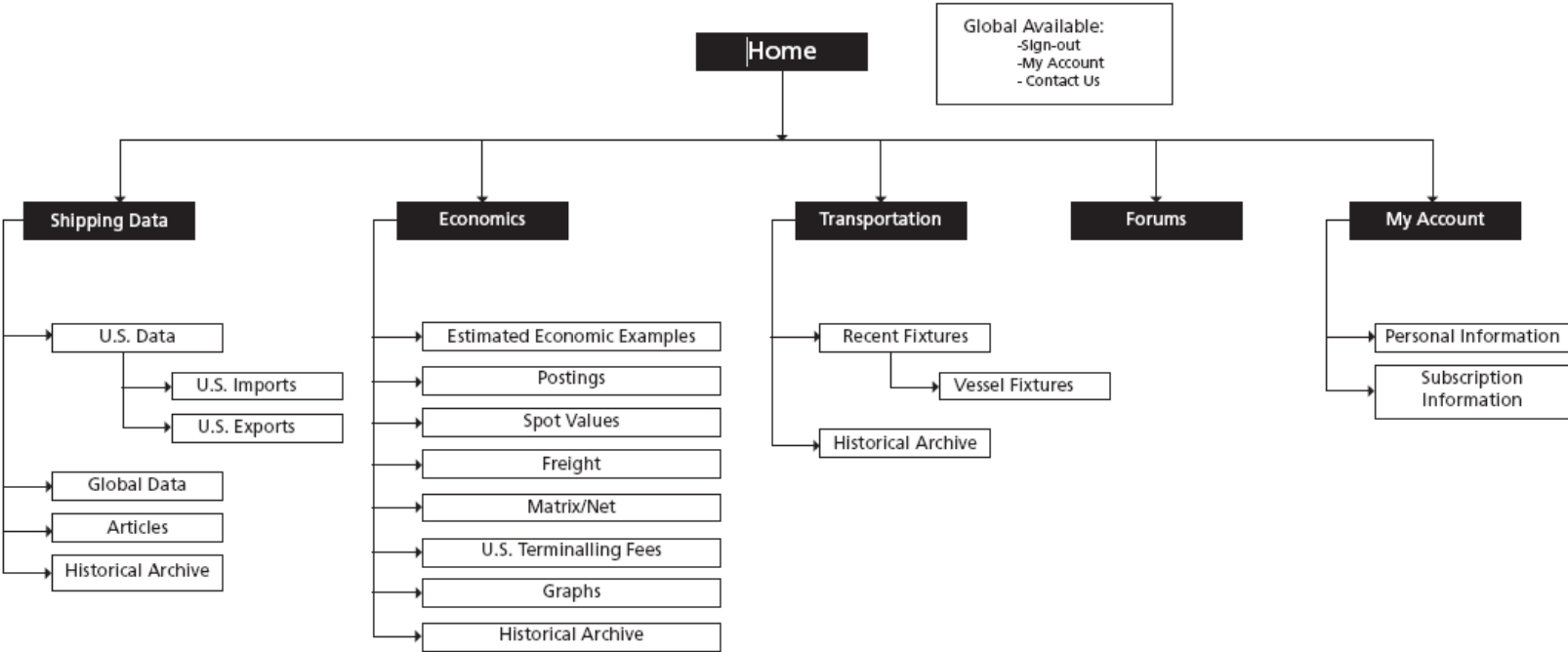


Figure 2: Waterborne LPG Diagram

LNG Portal Web Site Control Flow (Site map)

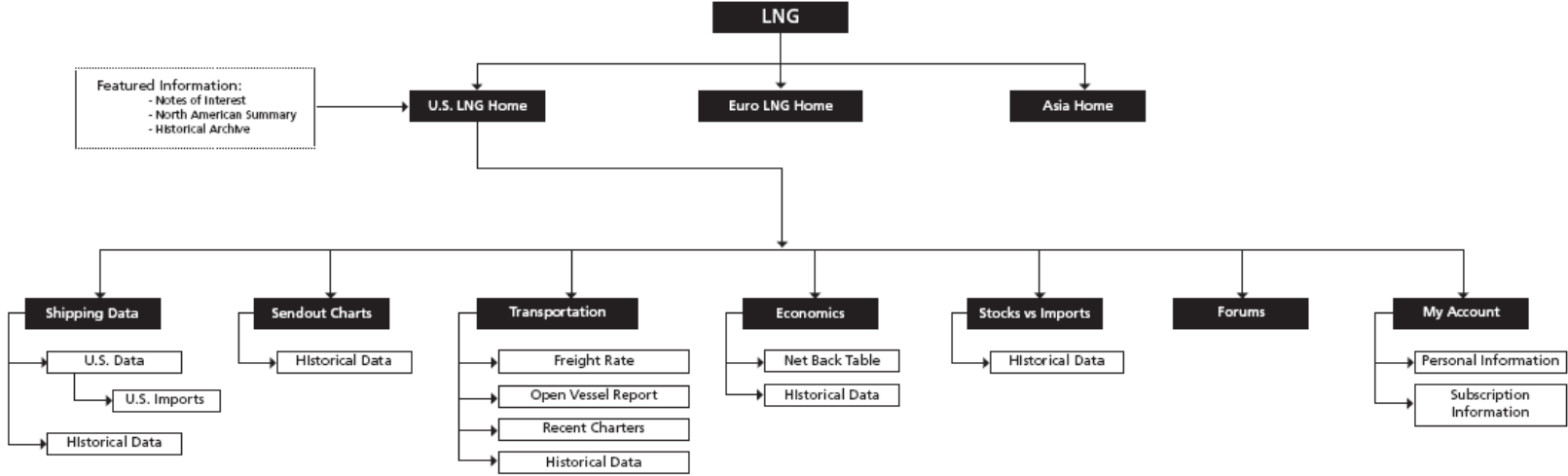


Figure 3: Waterborne LNG Diagram

Administration Management Web Site Control Flow (Site map)

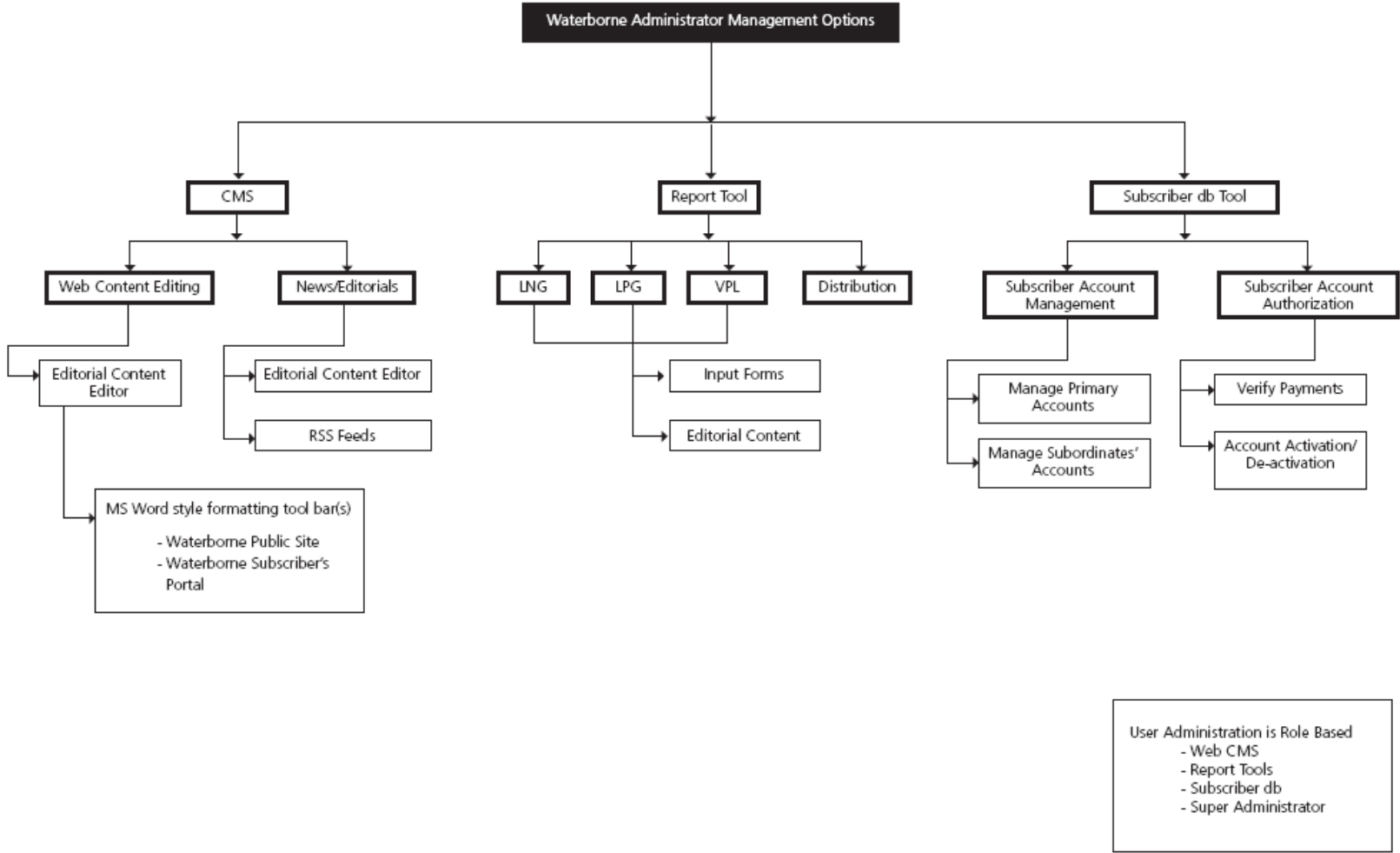


Figure 4: Waterborne Administration Diagram

3 Components

3.1 Common Components

The application will ensure support of 1024x768 screen resolution. All design elements, such as images, tables, and form fields, will utilize 'alt' tags, 'labels' and conform to development best practices. Complying with Six Foot Studios and W3C coding standards will assure full functionality in standards-compliant web browsers. The application is designed to be hosted on a Windows IIS web server and will require user authentication to access restricted areas.

3.1.1 Application Security

The application will support multiple user roles (permissions) and will provide different levels of accessibility for each role. User roles include: Public, Registered, Subscriber, and Administrator.

- **Public** - Restricted view only (no logon required)
- **Subscriber** – Access to the Subscriber Portal(s) (logon required)
 - May include any combination of: LNG, LNG Vessel Positioning Listing, LPG, LPG Vessel Positioning Listing
- **Administrator** – Access to the Administrator functions by role (logon required)
 - Web content management
 - Report tools: input forms, graph generation & editorial content
 - Subscriber management
 - account authorization/activation
 - account management
 - subscription management
 - User Administration

3.1.2 Product Interfaces

The application will be developed in multiple subsections. Sections include web based administrative tools; web site CMS, Subscriber database management and LPG/LNG Report tools, an extranet/ web portal application for Report Subscribers and the general public facing corporate web site.

3.2 Corporate (Public) Web Site Content Management System (CMS)

This section allows Authorized users to manage corporate web site content including graphic images, editorial content and relative corporate related content from a Dashboard interface.

The Corporate CMS management console providing access to the following input forms:

- Home Page Components
- Articles
- Cross Promote (right navigation menu)
- Waterborne Reports
- About Waterborne
- Contact Us

3.2.1 Home Page Components

This section allows Authorized users to manage general information about Waterborne and includes the following components:

- **Learn more about the Waterborne Reports**
 - Brief Description (one paragraph – approx 255 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)
 - Links to Report Summary page
 - Title (one line – approx 75 characters) - Required
 - URL (not displayed) - Required
 - Brief description (one line – approx 75 characters) - Optional
- **Benefits**
 - Brief Description (one paragraph – approx 255 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)

3.2.2 Articles

This section allows Authorized users to manage news & editorial Articles and includes the following components:

- **Articles**
 - Date/time stamp, system generated
 - Title (one line – approx 75 characters) - Required
 - Brief description (one line – approx 75 characters) - Required
 - Article Details - Required
 - Editorial content editor

- MS Word style formatting tool bar(s)

3.2.3 Cross Promote (right navigation menu)

This section allows Authorized users to manage Cross Promotion elements and includes the following components:

- **Title** (one line – approx 25 characters) - Required
- **Brief description** (one line – approx 50 characters) – Required
- **“Learn More”** link – from the range: LPG, LNG, LPG VPL or LNG VPL (URL not displayed) – Required. Clarification: Links to the selected report summary page.

3.2.4 Waterborne Reports

This section allows Authorized users to manage summary information about the Waterborne Reports and includes the following components:

- **Summary Introduction**
 - Title/Headline - Required
 - Brief Description (one paragraph – approx 255 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)
- **LPG Summary**
 - Brief Description (one paragraph – approx 75 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)
 - Links to Report Detail page
 - Title (one line – approx 75 characters) - Required
 - URL (not displayed) - Required
- **LNG Summary**
 - Brief Description (one paragraph – approx 75 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)
 - Links to Report Detail page
 - Title (one line – approx 75 characters) - Required
 - URL (not displayed) - Required
- **VPL Summary**
 - Brief Description (one paragraph – approx 75 characters) - Required
 - Editorial content editor - Required
 - MS Word style formatting tool bar(s)
 - Links to Report Detail page
 - Title (one line – approx 75 characters) - Required

- URL (not displayed) – Required

3.2.5 LPG Features & Benefits Management

This section allows Authorized users to manage LPG Features & Benefits and includes the following components:

- **Summary Introduction**
 - Title/Headline - Required
 - Brief Description (one paragraph – approx 255 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)
- **LPG Features & Benefits**
 - Brief Description (one paragraph – approx 75 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)
 - Links to Report Sample (PDF) – Required

3.2.6 LNG Features & Benefits Management

This section allows Authorized users to manage LNG Features & Benefits and includes the following components:

- **Summary Introduction**
 - Title/Headline - Required
 - Brief Description (one paragraph – approx 255 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)
- **US LNG Features & Benefits**
 - Brief Description (one paragraph – approx 75 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)
 - Links to Report Sample (PDF) - Required
- **Asia LNG Features & Benefits**
 - Brief Description (one paragraph – approx 75 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)
 - Links to Report Sample (PDF) - Required
- **Europe LNG Features & Benefits**
 - Brief Description (one paragraph – approx 75 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)

- Links to Report Sample (PDF) - Required

3.2.7 Vessel Position List (VPL) Features & Benefits Management

This section allows Authorized users to manage VPL Features & Benefits and includes the following components:

- **Summary Introduction**
 - Title/Headline - Required
 - Brief Description (one paragraph – approx 255 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)
- **LPG VPL Features & Benefits**
 - Brief Description (one paragraph – approx 75 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)
 - Links to Report Sample (PDF) – Required
- **LNG VPL Features & Benefits**
 - Brief Description (one paragraph – approx 75 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)
 - Links to Report Sample (PDF) - Required

3.2.8 Historical Archive

This section allows Authorized users to manage Historical Archive summary and includes the following components:

- **Summary Introduction**
 - Title/Headline - Required
 - Brief Description (one paragraph – approx 255 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)

3.2.9 Subscribe

This section allows Authorized users to manage Subscribe information and includes the following components:

- **Summary Introduction**
 - Title/Headline - Required
 - Brief Description (one paragraph – approx 255 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)

- **Pricing Summary**
 - Brief Description (one paragraph – approx 255 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)
- **Discount Pricing Matrix (summary)**
 - Brief Description (one paragraph – approx 255 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)

3.2.9.1 Pricing Matrix

This section allows Authorized users to manage Subscribe information and includes the following components:

- **Brief Description** (one paragraph – approx 255 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)
- **Detailed Description/Matrix** (Memo field) - Optional
 - Editorial content editor
 - MS Word style formatting tool bar(s)

3.2.10 Registration (editorial/header text) – part 2, Additional Subscribers

This section allows Authorized users to manage Registration information and includes the following components:

- **Brief Description** (one paragraph – approx 255 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)

3.2.11 About Waterborne

This section allows Authorized users to manage summary information About Waterborne and includes the following components:

- **Summary Introduction**
 - Title/Headline - Required
 - Brief Description (one paragraph – approx 255 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)

3.2.11.1 Executive Team

This section allows Authorized users to manage summary information About Waterborne and includes the following components:

- **Brief Description** (one paragraph – approx 255 characters) - Required

- Editorial content editor
- MS Word style formatting tool bar(s)

3.2.11.2 Heritage

This section allows Authorized users to manage summary information About Waterborne and includes the following components:

- **Brief Description** (one paragraph – approx 255 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)

3.2.11.3 Our Reports

This section allows Authorized users to manage summary information About Waterborne and includes the following components:

- **Brief Description** (one paragraph – approx 255 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)

3.2.12 Contact Us

This section allows Authorized users to manage summary information About Waterborne and includes the following components:

- **Summary Introduction**
 - Title/Headline - Required
 - Brief Description (one paragraph – approx 255 characters) - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)
 - Contact Details (approx 255 characters) - Optional
 - Editorial content editor
 - MS Word style formatting tool bar(s)

3.3 Corporate (Public) Web Site Display

This section allows the general public to view the corporate web site content defined in section 3.2.

3.3.1 Common Components - Header and Footer Sections

The application displays common Header and Footer sections on each page, including the following components:

- Link to the Waterborne Home Page
- Link to the Sub-section Home Page as applicable (LNG, LPG etc)
- Link to Subscribe Now (Subscribe page)
- Link to Subscriber Log in
- Text navigation (Footer only)
- Email link to webmaster or sub-section curator
- Table &/or Graph: Where applicable, data sets will allow users to toggle between Table &/or Graph views
- Units of Measure: Where applicable, data sets will allow users to toggle between units of measure conversions. Clarification: Metric tons converted to Barrels, USD converted to cents
- Date ranges: Where applicable, data sets will allow users to select date ranges from available historical records

3.3.2 Home Page Components

This section display general information about Waterborne as defined in 3.2.1 and includes the following components:

- **Learn more about the Waterborne Reports**
 - Brief Description
 - Links to Report Summary pages
 - Title
 - URL (not displayed)
 - Brief description
- **Benefits**
 - Brief Description
- **Articles (right navigation element)**
 - Dynamically generated list of Editorial Articles
 - Title
 - URL (not displayed)
 - Brief description

- “Read More” link (URL not displayed)
 - Links to Article Detail page
- **“Subscribe Now” button**
 - Links to Subscriber Registration

3.3.3 Article Detail

This section displays selected Article Details as defined in 3.2.2 and includes the following components:

- Date/time stamp
- Title
- Brief description
- Article Details
- Next / Previous links to additional articles
- Return to Home page link

3.3.4 Subscriber Log in

This section displays the Subscriber Log in form which allows registered users to access the Reports/Portal section of the web site.

- UserID
- Password
- User ID / Password Retrieval

3.3.4.1 Subscriber User ID / Password Retrieval

This section displays the Subscriber User ID / Password Retrieval function which allows registered users to verify their account and be emailed their login information.

Requires a valid entry of two (2) of the following options:

- UserID
- User’s email address
- User’s Full Name
- User’s Company Name
- Password

3.3.5 Waterborne Reports

This section displays Report Summary information as defined in 3.2.4 and includes the following components:

- **Summary Introduction**
 - Title/Headline
 - Brief Description
- **LPG Summary**
 - Brief Description
 - Links to Report Detail page
 - Title
 - URL (not displayed)
- **LNG Summary**
 - Brief Description
 - Links to Report Detail page
 - Title
 - URL (not displayed)
- **VPL Summary**
 - Brief Description
 - Links to Report Detail page
 - Title
 - URL (not displayed)
- **“Subscribe Now” button**
 - Links to Subscriber Registration
- **Cross Promote (right navigation menu)**
 - Title
 - Brief description
 - “Learn More” link (URL not displayed)

3.3.6 LPG Detail Display

This section display selected LPG Report Details as defined in 3.2.5 and includes the following components:

- **LPG Summary Introduction**
 - Title/Headline
 - Brief Description
- **US LNG Features & Benefits**
 - Brief Description
 - Subscription Price
 - Link to Sample Report PDF

- “Subscribe Now” link to Subscribe form
- **Asia LNG Features & Benefits**
 - Brief Description
 - Subscription Price
 - Link to Sample Report PDF
 - “Subscribe Now” link to Subscribe form
- **Europe LNG Features & Benefits**
 - Brief Description
 - Subscription Price
 - Link to Sample Report PDF
 - “Subscribe Now” link to Subscribe form
- **“Subscribe Now” button**
 - Links to Subscriber Registration
- **Cross Promote (right navigation menu)**
 - Title
 - Brief description
 - “Learn More” link (URL not displayed)

3.3.7 LNG Detail Display

This section display selected LPG Report Details as defined in 3.2.6 and includes the following components:

- **LNG Summary Introduction**
 - Title/Headline
 - Brief Description
- **US LNG Features & Benefits**
 - Brief Description
 - Subscription Price
 - Link to Sample Report PDF
 - “Subscribe Now” link to Subscribe form
- **“Subscribe Now” button**
 - Links to Subscriber Registration
- **Cross Promote (right navigation menu)**
 - Title
 - Brief description
 - “Learn More” link (URL not displayed)

3.3.8 VPL Detail Display

This section display VPL Report Details as defined in 3.2.7 and includes the following components:

- **VPL Summary Introduction**
 - Title/Headline
 - Brief Description
- **LNG VPL Features & Benefits**
 - Brief Description
 - Subscription Price
 - Link to Sample Report PDF
 - “Subscribe Now” link to Subscribe form
- **“Subscribe Now” button**
 - Links to Subscriber Registration
- **Cross Promote (right navigation menu)**
 - Title
 - Brief description
 - “Learn More” link (URL not displayed)

3.3.9 Historical Archive

This section displays Historical Archive summary as defined in 3.2.8 and includes the following components:

- **Summary Introduction**
 - Title/Headline
 - Brief Description (one paragraph)
 - Screen shot (image) of Historical Archive search tool
- **“Subscribe Now” button**
 - Links to Subscriber Registration
- **Cross Promote (right navigation menu)**
 - Title
 - Brief description
 - “Learn More” link (URL not displayed)

3.3.10 Subscribe (summary page)

This section displays Subscribe information as defined in 3.2.9 and includes the following components:

- **Summary Introduction**

- Title/Headline
- Brief Description
- **“Subscribe Now” button**
 - Links to Subscriber Registration defined in 3.3.10.1
- **Pricing Summary**
 - Brief Description
 - **LPG**
 - Subscription Price
 - **LPG**
 - US Subscription Price
 - Asia Subscription Price
 - Europe Subscription Price
 - **VPL**
 - LNG VPL Subscription Price
 - LPG VPL Subscription Price
- **Discount Pricing Matrix**
 - Brief Description
 - Link to Pricing Details
 - Links to Pricing Matrix defined in 3.2.9.1
 - Link to “Subscribe Now”
 - Links to Subscriber Registration defined in 3.3.10.1

3.3.10.1 Subscriber Registration

This section displays Subscriber Registration form and includes the following components:

- **Registration – Clarification:** The initial subscriber for each account is designated as account administrator.
 - Email (user ID) – Required
 - Email confirmation – Required
 - Password – Required
 - Password confirmation – Required
- **Contact Information**
 - First Name – Required
 - Last Name – Required
 - Company Name – Optional

- Address line 1 – Required
- Address line 2 – Optional
- Address line 3 – Optional
- City – Required
- State – Optional
- Postal Code (Zip) – Required
- Country – Select menu
- Telephone – Optional
- **Billing Information** – Clarification: Restricted access allowed only to the designated as account administrator(s).
 - Same As Contact Information – Yes/No Radio button - Required. Clarification: Billing information is required is selection is “NO”.
 - First Name – Required
 - Last Name – Required
 - Company Name – Optional
 - Address line 1 – Required
 - Address line 2 – Optional
 - Address line 3 – Optional
 - City – Required
 - State – Optional
 - Postal Code (Zip) – Required
 - Country – Select menu
 - Telephone - Optional
- **Invoice Delivery (Payment Method) - Required**
 - By Email – Radio button
 - By Posted Mail – Radio button
 - By Purchase Order – Radio button
 - By Credit Card – Radio button
- **Special Instructions**
 - Text area (255 characters) – Optional

3.3.10.2 Registration – part 2, Additional Subscribers

This section displays Subscribe information as defined in 3.2.10 and includes the following components:

- **Summary Introduction** – Clarification: Restricted access allowed only to the designated as account administrator(s).
- **Continue** – link to Subscription Options
- **Register Additional Subscribers** – link to Subscriber Registration form. Clarification: Restricted access allowed only to the designated as account administrator(s).

3.3.10.3 Subscription Options

This section displays Subscription Options for registered users and includes the following components:

- **Manage User / Subscription** – Clarification: Restricted access allowed only to the designated as account administrator(s).
 - Contact First name
 - Contact Last name
 - Admin Access – Check box
 - Billing Access– Check box
 - Report Subscriptions
 - LPG – Check box
 - US LNG – Check box
 - Asia LNG – Check box
 - Europe LNG – Check box
 - APL LPG – Check box
 - APL LPG – Check box
- **Subscription Sub-totals by Report** (system calculated)
- **Subscription Total** (system calculated)
- **Save Options & Continue** – link to Subscription Confirmation page
- **Register Additional Subscribers** – link to Subscriber Registration form. Clarification: Restricted access allowed only to the designated as account administrator(s).

3.3.10.4 Subscription Confirmation

This section displays Subscribe summary information and includes the following components:

- **Registration**
- **Contact Information**
- **Billing Information**
- **Invoice Delivery**
- **Subscription Summary**
 - Report title

- Qty
 - Discounted Pricing
 - **Subscription Total**
- **Change Users/Subscriptions**– link to Subscription Options page
- **Terms & Conditions**
 - Agreement - Radio Button – Required
 - Link to Terms & Conditions PDF
- **Submit button**

3.3.10.5 Subscription Submission

The subscription submission function will perform the following:

- Display a Submission Verification message
- Create/update the Submission database records
- Generate a Submission Verification email to the Subscriber
- Generate a Registration email notification to Additional Subscribers
 - The email notification will display a link to the Additional Subscriber registration form.
- Generate a Submission email to the Waterborne Subscriber Administrator

3.3.11 About Waterborne

This section displays About Waterborne information as defined in 3.2.11 and includes the following components:

- **Summary Introduction**
 - Title/Headline
 - Brief Description

3.3.11.1 About Waterborne – Executive Team

This section displays About Waterborne information as defined in 3.2.11.1 and includes the following components:

- **Summary Introduction**
 - Title/Headline
 - Brief Description

3.3.11.2 About Waterborne - Heritage

This section displays About Waterborne information as defined in 3.2.11.2 and includes the following components:

- **Summary Introduction**
 - Title/Headline
 - Brief Description

3.3.11.3 About Waterborne- Our Reports

This section displays About Waterborne information as defined in 3.2.11.3 and includes the following components:

- **Summary Introduction**
 - Title/Headline
 - Brief Description

3.3.11.4 Contact Us

This section displays Waterborne Contact information as defined in 3.2.12 and includes the following components:

- **Summary Introduction**
 - Title/Headline
 - Brief Description

3.4 Subscriber (database) Management Application

This section allows Authorized Users to manage (add/edit/delete) Subscriber accounts and subscriptions and includes the following components:

- Subscriber Registration
- Subscriber User Profile Management
- Subscriber Subscription Management
- Subscriber Subordinates Management

3.4.1 Subscriber Registration

This section allows Authorized Users to Register/Add new Subscribers as defined in 3.3.10.1

3.4.2 Subscriber User Profile Management

This section allows Authorized Users to manage Subscriber User Profiles as defined in 3.3.10.1 and 3.3.10.2.

3.4.3 Subscriber Subscription Management

This section allows Authorized Users to manage Subscriptions as defined in 3.3.10.3.

3.4.4 Subscriber Administrator Management

This section allows Authorized Users to manage subscriber's administrative profiles as defined in 3.3.10.

- Manage Primary (administrative) Account
 - Contact Information
 - Billing Information
 - Report Options
- Manage Subordinates' Accounts
 - Contact Information
 - Report Options

3.4.4.1 Subscriber Account Authorization

This section allows Authorized Users to manage Subscriber Account Authorization and Activation.

- Verification of payment (off-line/manual process)
- Account Activation/De-activation
 - System generated Confirmation Email
 - Activates/De-activates User's report download capabilities

3.4.4.2 Subscriber Subscription Renewal Management

This section allows Authorized Users to manage Subscription Renewal options.

- Auto Renewal (Y/N) – Default Yes
- Pre-expiration messages
 - System generated renewal Email
 - 30, 15, 2 days
 - Up Sell messages
- Grace period – 30 days

3.5 LPG Administrative Dashboard

This section displays the LPG management console and allows Authorized users to manage LPG report data & LPG web portal content. The console provides access to the following input forms:

- LPG Industry Events & Notices
- LPG Articles
- LPG Shipping Data (Lifting's)
 - US Imports
 - US Exports
 - International Lifting's
- LPG Vessel Data
- LPG Economic Data
 - Regional Postings
 - Saudi Postings
 - Algerian Postings
 - User defined
 - Look Up Tables
 - Netback
 - Freight Rate
 - Spot Prices
- LPG Search Functions
 - Shipping Data
 - US Imports
 - US Exports
 - International Lifting's
 - User defined search
 - Shipping Reports
 - US Imports
 - US Exports
 - International Lifting's
 - Vessel Data
- Subscriber Data – Link to Subscriber Administration Dashboard
- LPG Report Review
 - Current Published Report

- Draft Report
- Archived Reports
- LNG Tools – Link to LNG Dashboard

3.5.1 LPG Industry Events & Notices

This section allows Authorized users to manage calendar events and includes the following components:

- Event Type – from the range: Convention, Industry Event or Professional Notices – Required.
- Event Date – Required
- Title (one line – approx 75 characters) - Required
- Brief description (one line – approx 255 characters) - Optional
- "For More Info" link – (URL not displayed) – Optional. Clarification: Links to external URL open in a pop-up window.

3.5.2 LPG Articles

This section allows Authorized users to manage LPG news & editorial articles and includes the following components:

- **Articles**
 - Date/time stamp, system generated
 - Title (one line – approx 75 characters) - Required
 - Brief description (one line – approx 75 characters) - Required
 - Article Details - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)

3.5.3 LPG Shipping Data (Lifting's Search/entry tool)

This section allows Authorized users to manage LPG Shipping Data and includes the following search/input form for entry of all **US Imports/Exports** and **International** Lifting's:

- **Search/Entry tool bar**
 - The tool bar allow Authorized users to search or enter new LPG Lifting details
 - **Vessel Data**
 - Vessel Name (auto complete/select menu) – Required
 - Auto-complete text entry field. Clarification: Text entries are dynamically compared to existing database records
 - Select menu
 - Vessel IMO

- Auto-complete text entry field. Clarification: Text entries are dynamically compared to existing database records
 - Vessel Call Sign
 - Auto-complete text entry field. Clarification: Text entries are dynamically compared to existing database records
 - **Volumes**
 - Unit of Measure – Required - from the range:
 - Metric Tons (MT)
 - Barrels (bbl) – default
 - C2 (Ethane)- Optional
 - C3 (Propane) – Required
 - C4 (Butane) – Required
 - C5 (Pentanes) - Optional
 - IC4 (isobutene)
 - C3C4 (Propane/Butane) - Optional
 - EP (ethane/propane) - Optional
 - NC4 (Normal Butane) - Optional
 - **Region**
 - Region – select menu, from the Range: Asia, Americas, Europe, Mid-East
 - Coast – from the Range: East, West or Gulf - determined by Region
 - State
 - Source Port – select menu - Required
 - Source Terminal – select menu
 - Source Plant – select menu
 - Destination Port – select menu – Required
 - Destination Terminal – select menu
 - **Participants**
 - Participant Name -(one line – approx 75 characters) - Required
 - Auto-complete text entry field. Clarification: Text entries are dynamically compared to existing database records.
 - Participant Role – select menu, from the range Buyer, Seller – Required
- Search results are displayed in a data set (table format) that allows in-line editing
- **Search Result data set (table)**
 - Region – select menu, from the Range: Asia, Americas, Europe, Mid-East

- Coast – from the Range: East, West or Gulf - determined by Region
- (Transport) Date - Required
- Vessel Name (auto complete/select menu) – Required
 - Auto-complete text entry field. Clarification: Text entries are dynamically compared to existing database records.
 - Select menu
- Vessel IMO
 - Auto-complete text entry field. Clarification: Text entries are dynamically compared to existing database records
- Vessel Call Sign
 - Auto-complete text entry field. Clarification: Text entries are dynamically compared to existing database records
- Source Port – select menu - Required
- Source Terminal – select menu
- Source Plant – select menu
- Destination Port – select menu – Required
- Destination Terminal – select menu
- Volumes
 - Unit of Measure – Required - from the range:
 - Metric Tons (MT)
 - Barrels (bbl) – default
 - C2 (Ethane)- Optional
 - C3 (Propane) – Required
 - C4 (Butane) – Required
 - C5 (Pentanes) - Optional
 - IC4 (isobutene)
 - C3C4 (Propane/Butane) - Optional
 - EP (ethane/propane) - Optional
 - NC4 (Normal Butane) - Optional
- Participants – Clarification: May include multiple buyers
 - Seller (Role)
 - Buyer (Role)
- In/Out – from the range In/Out – accepts Null
- Spot – from the range Yes/No – default No

3.5.4 LPG Vessel Data

This section allows Authorized users to manage LPG Vessel Data and includes the following search/input form:

- Vessel Name -(one line – approx 75 characters) - Required
 - Auto-complete text entry field. Clarification: Text entries are dynamically compared to existing database records.
- Owner -(one line – approx 75 characters) – Optional
 - Auto-complete text entry field. Clarification: Text entries are dynamically compared to existing database records.
- [USCG - ? US Coast Guard – Number?](#)
- International Maritime Organization (IMO) id
- International call sign (call) id
- **CBM (cubic meters)**
- Capacity
 - Total Capacity in Metric Tons (MT)
 - **CBM (cubic meters)**
 - C3 Capacity in MT(MT-C3)
 - C4 Capacity in MT (MT-C4)
- [Previous Owner](#) -(one line – approx 75 characters)
 - Auto-complete text entry field. Clarification: Text entries are dynamically compared to existing database records.
- Year Built – from the Range 1900-Present
- Long Term – from the Range Yes/No – default No
- Remarks - (one paragraph – approx 255 characters) ([currently P, S & R – what are these?](#))

3.5.5 LPG Participants

This section allows Authorized users to manage LPG participant data and includes the following search/input form:

- Participant Name -(one line – approx 75 characters) - Required
 - Auto-complete text entry field. Clarification: Text entries are dynamically compared to existing database records.
- Company name -(one line – approx 75 characters) - Required
 - Auto-complete text entry field. Clarification: Text entries are dynamically compared to existing database records.

3.5.6 LPG “Trade” Routes

This section allows Authorized users to manage LPG Shipping Route Data and includes the following search/input form:

- LPG Trade Route title -(one line – approx 75 characters) – Required
- Source Port – select menu – Required
- Destination Port – select menu – Required
- Travel duration – in Days - Required

3.5.7 LPG Economic Data

This section allows Authorized users to manage LPG Economic Data and includes the following search/input forms:

- Regional Postings ([Lifting's](#))
 - Saudi Postings
 - Algerian Postings
 - User Defined
- [Data Conversions](#)
 - [Toggled Unit of Measure from the range \\$/mt, or cts/gal](#)
- Look Up Tables
 - [LPG Spot Market](#) Spot Prices
 - [LPG Spot Market](#) Netback Values
 - [LPG Spot Market](#) Freight Rates
 - LPG Posting Regions

3.5.7.1 LPG Posting Regions (Look-up table)

This section allows Authorized users to manage LPG Regional Postings Regions and includes the following input form fields:

- Region – select menu, from the Range: Americas, Asia, Europe, Mid-East - Required
- LPG Posting Region Title (one line – approx 75 characters) – Required
 - Auto-complete text entry field. Clarification: Text entries are dynamically compared to existing database records.

3.5.7.2 LPG Regional Postings

This section allows Authorized users to manage LPG Regional Posting Data and includes the following input form fields:

- Region – select menu, from the Range defined in the LPG Posting Regions look-up table - Required
- Effective Date
- Current Publish Date (entry date)

- Unit of Measure – select menu, from the Range US Dollars per Metric ton (\$/MT), US Cents per Gallon (cts/gal), or US Dollars per Barrel (\$/bbl) - Required
- C3 (Propane) – default \$/mt
- C3 (Propane) - default cts/gal
- C4 (Butane) - default \$/mt
- C4 (Butane) - default cts/gal

3.5.7.3 LPG Spot Regions (Look-up table) (are these different from Regions?)

This section allows Authorized users to manage LPG Spot Market Regional Regions and includes the following input form fields:

- Region – select menu, from the Range: Asia, Americas, Europe, Mid-East - Required
- LPG Spot Region Title (one line – approx 75 characters) – Required
 - Auto-complete text entry field. Clarification: Text entries are dynamically compared to existing database records.
 - Clarification: Default options range:
 - Algeria
 - Australia
 - E-China Pressure
 - E-China Ref.
 - Japan
 - Mt. Belvieu
 - Naphtha
 - New York
 - Northwest Europe
 - Saudi
 - S-China Pressure
 - S-China Ref.
 - US Gulf Coast (USGC)
 - US East Coast (USEC)
 - Mediterranean
 - Middle-East
 - NE Europe (NWE)

3.5.7.4 LPG Netback (Spot Market Prices)

This section allows Authorized users to manage LPG Netback Data and includes the following search/input form fields:

- Current Publish Date (entry date)
- Region – select menu, from the Range defined in the LPG Posting Regions look-up table – Required
- Type – select menu, from the Range FOB, CFR, CP Prem (Disc) or CIF - Required
- Unit of Measure – select menu, from the Range US Dollars per Metric ton (\$/MT), US Cents per Gallon (cts/gal), or US Dollars per Barrel (\$/bbl) - Required
- C3 Low Price
- C3 High Price
- C4 Low Price
- C4 Low Price

3.5.7.5 LPG Freight Rate Regions (Look-up table)

This section allows Authorized users to manage LPG Freight Rate Regions and includes the following input form fields:

- Region – select menu, from the Range: Asia, Americas, Europe, Mid-East - Required
- LPG Spot Region Title (one line – approx 75 characters) – Required
 - Auto-complete text entry field. Clarification: Text entries are dynamically compared to existing database records.
 - Clarification: Default options range:
 - Algeria
 - Australia
 - Mexico
 - North Sea
 - Ras Tanura
 - Venezuela
 - Yanbu

3.5.7.6 LPG Freight Rate

This section allows Authorized users to manage LPG Freight Rate Data and includes the following search/input forms:

- Current Publish Date (entry date)
- Region – select menu, from the Range defined in the LPG Freight Rate Regions look-up table – Required
- Port Name – select menu, from the Ranged defined in Ports look-up table - Required
- Freight Rate – USD
 - Unit of Measure – default US Dollars per Metric ton (\$/MT) - Required

- Publish – On/Off Radio button

3.5.7.7 LPG Data Conversions – Toggled C3/C4 (what is this?)

This section allows Authorized users to manage LPG Data Conversions and includes the following search/input forms:

- Stuff
- Stuff

3.5.7.8 LPG CP Premium Discount (what is this?)

This section allows Authorized users to manage LPG Economic Data and includes the following search/input forms:

- Stuff
- Stuff

3.5.7.9 LPG Estimated US Terminalling Fees

This section allows Authorized users to manage US Terminalling Fee Data and includes the following search/input forms:

- Port Name – select menu, from the Ranged defined in Ports look-up table as US ports - Required
- C3/C4 – select menu
- Type – from the range Semi-ref, Ambient, Fully Ref.
- Loading Rate – USD
 - Unit of Measure – default US Dollars per Metric ton (\$/MT) - Required
- Unloading Rate (Fully Ref) – USD
 - Unit of Measure – default US Dollars per Metric ton (\$/MT) - Required
- Purity – select menu, from the Range Purity or Non-Purity - Required

3.5.8 LPG Search Functions

This section allows Authorized users to generate LPG Shipping Data Searches and includes the following search forms:

- US Imports\Exports
- International
 - Lifting's by Source
 - Lifting's by Destination
 - Lifting's by Origin
 - Lifting's by Vessel

- Global Lifting's (how is this diff from Int'l)
- World Search

3.5.8.1 LPG Search - US Imports\Exports

This section allows Authorized users to generate LPG Shipping Data Searches and includes the following search results:

- Date Range
 - Starting (Lifting) Date
 - Ending (Lifting) Date
- Display Results:
 - In/Out
 - (Lifting) Date
 - Vessel Name
 - Volume in MT
 - C3
 - C4
 - IC4
 - C3C4
 - Monthly Volume Sub-totals
 - Seller
 - Buyer
 - Source Port
 - Destination Port
- Export to Excel function

3.5.8.2 LPG Search – International by Source

This section allows Authorized users to generate LPG Shipping Data Searches and includes the following search results:

- Date Range
 - Starting (Lifting) Date
 - Ending (Lifting) Date
- Source Port – select menu - Required
- Display Results:
 - Source Port
 - (Lifting) Date

- Vessel Name
- Volume in MT
 - C3
 - C4
- Monthly Volume Sub-totals
- Seller (Lifters)
- Destination Port
- Export to Excel function

3.5.8.3 LPG Search - International by Destination

This section allows Authorized users to generate LPG Shipping Data Searches and includes the following search results:

- Date Range
 - Starting (Lifting) Date
 - Ending (Lifting) Date
- Destination Port – select menu – Required ([why are there 2 destinations, is one "Lifter"?](#))
- Display Results:
 - Destination Port
 - (Lifting) Date
 - Vessel Name
 - Volume in MT
 - C3
 - C4
 - Monthly Volume Sub-totals
 - Seller (Lifters)
 - Source Port
- Export to Excel function

3.5.8.4 LPG Search - International by Origin (Source)

This section allows Authorized users to generate LPG Shipping Data Searches and includes the following search results:

- Date Range
 - Starting (Lifting) Date
 - Ending (Lifting) Date
- [Source Region \(or Country?\)](#) – select menu - Required

- Display Results:
 - [Source Region \(or Country? or Terminal?\)](#)
 - (Lifting) Date
 - Vessel Name
 - Volume [in MT](#)
 - C3
 - C4
 - Monthly Volume Sub-totals
 - Seller ([Lifters](#))
 - Buyer
 - Source Port
 - Destination Port
- Export to Excel function

3.5.8.5 LPG Search - International by Vessel

This section allows [Authorized users](#) to generate [LPG Shipping Data Searches](#) and includes the following [search](#) results:

- Date Range
 - Starting (Lifting) Date
 - Ending (Lifting) Date
- Report Order by
 - Vessel
 - CBM
- Vessel Name
- CBM
 - Min [in MT](#)
 - Max [in MT](#)
- Display Results:
 - (Lifting) Date
 - Report Order
 - Vessel Name
 - Volume [in MT](#)
 - C3
 - C4

- Seller (lifter?)
- Buyer
- Source Port (Origin- Terminal?)
- Destination Port
- Export to Excel function

3.5.8.6 LPG Search – Global Lifting's

This section allows Authorized users to generate LPG Shipping Data Searches and includes the following search results:

- Date Range
 - Starting (Lifting) Date
 - Ending (Lifting) Date
- Source Port
- Display Results:
 - In/Out
 - (Lifting) Date
 - Vessel Name
 - Volume in MT
 - C3
 - C4
 - IC4
 - C3C4
 - Monthly Volume Sub-totals
 - Seller
 - Buyer
 - Source Port
 - Destination Port
- Export to Excel function

3.5.8.7 LPG Search – World Search

This section allows Authorized users to generate LPG Shipping Data Searches and includes the following search results:

- Date Range
 - Starting (Lifting) Date
 - Ending (Lifting) Date

- Vessel Name
- Display Results:
 - [Origin \(Terminal\)](#)
 - Vessel Name
 - [Destination Port](#)
 - (Lifting) Date
 - Vessel Name
 - Volume in MT
 - C3
 - C4
 - IC4
 - C3C4
 - Monthly Volume Sub-totals
 - Seller
 - Buyer
- Export to Excel function

3.5.9 LPG Report Preview

This section allows Authorized users to review the LPG Report sections and links to the following components for review and editing:

- [Table of Contents](#)
 - [Global LPG Lifting's Index Chart & Graph](#)
 - [Waterborne LPG Transportation](#)
 - [Middle East](#)
 - [Far East](#)
 - [Japanese LPG Inventories](#)
 - [Japanese LPG Demand](#)
 - [Malaysia / Australia / Bontang](#)
 - [West Africa](#)
 - [Combined West African LPG Lifting's By Destination](#)
 - [Algeria](#)
 - [Northwest Europe](#)
 - [Latin America](#)
 - [United States](#)
 - [North American Weather Outlook](#)

- U.S. LPG Imports
- U.S. LPG Import Schedule
- U.S. LPG Exports
- U.S. LPG Export Schedule
- U.S. LPG Imports & Exports Summary
- Estimated Spot Values (Typical Routes)
- Estimated Spot Values (Arbitrage Routes)
- International Posted Prices
- Estimated Global Spot LPG Prices
- Spot LPG Freight Rates
- Economic Summary Matrix
- Spot LPG Netback Values
- Estimated U.S. Terminalling Fees
- Conversion Factors / Definitions

3.5.10 LPG Report Publication & Distribution

This section allows Authorized users to publish and distribute the LPG report and includes the following components:

- Publication
 - Publish Date – Required
 - Issue / Volume / Week – TBD – system generated – Required
- Distribution – system generated
 - Post finalized content to database
 - Post finalized content to LPG Portal web site
 - Generated Encrypted PDF report
 - Email notification to current Subscribers
 - Generate Email Distribution Report
- Archive
 - Archive historical content in database
 - Archive historical copy of PDF report

3.5.10.1 LPG Email Distribution Report

This section allows Authorized users to view a report of LPG report email distribution and includes the following components:

- Distribution Report

- Total LPG Subscribers
- Total Email failures
- Bounce Report
 - [Failure Notice](#)
 - UserID (email address)
 - User First Name
 - User Last Name
 - Company
 - Telephone
 - Link to Subscriber Administration Dashboard

3.6 *LPG Subscriber Portal*

This section allows authorized users (Subscribers) to view the Waterborne LPG Portal defined in section 3.5.

3.6.1 **Common Components - Header and Footer Sections**

The application displays common Header and Footer sections, including the following components:

- Link to the Waterborne Home Page
- Link to the Sub-section Home Page as applicable (LNG, LPG etc)
- Link to My Account (Subscriber Profile page)
- Link to Sign out
- Link to Write Us
- Link to Help
- Link to Contact Us
- Search form (Keyword search)
- Custom Criteria/Search Bar
- Primary (Top) Navigation menu
 - LNG
 - LPG
 - VPL
- Sub-Section (Top) Navigation menu
 - Shipping Data
 - Economics
 - Transportation
 - Link to Historical Data
 - Link to Download current Report
- Left Sub-section menu
 - Sub-section specific menu
 - LPG Articles (Summaries)
 - Links to Article Detail
 - Industry Events & Notices
 - Links to Events & Notices Calendar Detail
 - LPG Info & Tool
 - Links to Glossary
 - Links to Conversion tables

- Links to Calculator
- Links to Distance Calculator
- Weather 30-day Outlook summary
 - Links to Weather Detail
- Text navigation (Footer only)
- Tables &/or Graphs: Where applicable, data sets will allow users to toggle between Table &/or Graph views
- Units of Measure: Where applicable, data sets will allow users to toggle between units of measure conversions. Clarification: Metric tons converted to Barrels, USD converted to cents
- Date ranges: Where applicable, data sets will allow users to select date ranges from available historical records

3.6.2 LPG Portal Home Page

This section allows authorized users (Subscribers) to access the Waterborne LPG Portal defined in 3.5.1 thru 3.5.7 and includes the following components:

- Left Sub-section menu
- LPG Monthly Global Lifting's Graph
 - Default date range is most recent 37 months
 - Default International Lifting's (tab)
 - US Imports (tab)
 - US Exports (tab)
- Total Monthly Global Lifting's – right menu
 - Default date range is most recent 3 years
 - Annual Average
 - Volume in MT
 - Propane
 - Butane
 - Total
 - Annual by Month
 - Month name
 - Volume in MT
 - Propane
 - Butane
 - Total

3.6.3 LPG US Imports

This section allows Authorized users to view the following components:

- Sub-section specific menu
 - US Imports
 - US Exports
 - Global Data
 - Articles
- Left Sub-section menu
- Search Bar
 - [Stuff](#)
 - [Stuff](#)
- Data table
 - Graph view toggle
 - In/Out flag
 - Lifting Date
 - Vessel Name
 - Volume
 - Default MT
 - CBM toggle
 - C3
 - C4
 - IC4
 - C3C4
 - Seller
 - Buyer
 - Source Port
 - Destination Port
- Link to Download as Excel

3.6.4 LPG Articles Detail

This section allows Authorized users to view the following components:

- **Articles**
 - Date/time stamp, system generated
 - Title (one line – approx 75 characters)

- Brief description (one line – approx 75 characters)

3.6.5 LPG Estimated Economic Examples

This section allows Authorized users to view the following components:

- [Table of Contents](#)

3.6.6 Postings?

3.6.7 LPG Estimated Spot Typical Routes

This section allows Authorized users to view the following components::

- Current Publish Date (entry date)
- Region – from the Range defined in the LPG Posting Regions look-up table
 - Clarification: Default options range:
 - Ras Tanura to Japan
 - Ras Tanura to China
 - Yanbu to Mediterranean
 - Algeria to NW Europe
 - Algeria to US Gulf Coast
 - Type – from the Range FOB, CFR, CP Prem (Disc) or CIF - Required
 - Unit of Measure – from the Range US Dollars per Metric ton (\$/MT), US Cents per Gallon (cts/gal), or US Dollars per Barrel (\$/bbl) - Required
 - C3 Low Price
 - C3 High Price
 - C4 Low Price
 - C4 Low Price

3.6.8 LPG Estimated Spot Arbitrage Routes

This section allows Authorized users to view the following components:

- Current Publish Date (entry date)
- Region – from the Range defined in the LPG Posting Regions look-up table – Required
 - Clarification: Default options range:
 - Ras Tanura to US Gulf Coast
 - Yanbu to US Gulf Coast
 - Algeria to China
 - Algeria to Japan
 - Type – from the Range FOB, CFR, CP Prem (Disc) or CIF - Required

- Unit of Measure –from the Range US Dollars per Metric ton (\$/MT), US Cents per Gallon (cts/gal), or US Dollars per Barrel (\$/bbl) - Required
- C3 Low Price
- C3 High Price
- C4 Low Price
- C4 Low Price

3.6.8.1 LPG Spot Market Netback Values

This section allows Authorized users to view the following components:

- Current Publish Date (entry date)
- Destination (Region) – from the Range defined in the LPG Posting Regions look-up table – Required
 - Clarification: Default options range:
 - Japan
 - NW Europe
 - US Gulf Coast
 - US East Coast
 - China
 - Type – from the Range FOB, CFR, CP Prem (Disc) or CIF - Required
 - Unit of Measure – from the Range US Dollars per Metric ton (\$/MT), US Cents per Gallon (cts/gal), or US Dollars per Barrel (\$/bbl) - Required
 - C3 Low Price
 - C3 High Price
 - C4 Low Price
 - C4 Low Price

3.6.8.2 LPG Estimated Global Spot Prices

This section allows Authorized users to view the following components:

- Current Publish Date (entry date)
- [Destination](#) (Region) – from the Range defined in the LPG Posting Regions look-up table – Required
 - Clarification: Default options range:
 - Algeria
 - Australia
 - China
 - South China

- East China
 - China (Pressure)
 - South China
 - East China
 - Japan
 - Middle East
 - North Sea
 - NW Europe
- Type – from the Range FOB, CFR, CP Prem (Disc) or CIF - Required
- Unit of Measure – from the Range US Dollars per Metric ton (\$/MT), US Cents per Gallon (cts/gal), or US Dollars per Barrel (\$/bbl) - Required
- C3 Low Price
- C3 High Price
- C4 Low Price
- C4 Low Price

3.6.9 LPG Freight Rates

This section allows Authorized users to view the following components:

- Current Publish Date (entry date)
- [Source](#) (Region) – from the Range defined in the LPG Posting Regions look-up table – Required
 - Clarification: Default options range:
 - Algeria
 - Australia
 - China
 - South China
 - East China
 - China (Pressure)
 - South China
 - East China
- [Destination](#) (Region) – from the Range defined in the LPG Posting Regions look-up table – Required
 - Clarification: Default options range:
 - Algeria

- Australia
- China
 - South China
 - East China
- China (Pressure)
 - South China
 - East China

3.6.10 LPG Matrix Netback

This section allows Authorized users to view the following components:

- [Table of Contents](#)

3.6.11 LPG US Terminalling Fees

This section allows Authorized users to view the following components:

- [Table of Contents](#)

3.6.12 LPG Recent Fixtures

This section allows Authorized users to view the following components:

- [Table of Contents](#)

3.6.13 LPG Transportation Summary

This section allows Authorized users to view the following components:

- [Table of Contents](#)

3.6.14 LPG Vessel Specifications

This section allows Authorized users to view the following components:

- [Table of Contents](#)

3.6.15 LPG Historical Data

This section allows Authorized users to view the following components:

- [Table of Contents](#)

3.6.16 LPG Industry Events & Notices

This section allows Authorized users to view the following components:

- [Table of Contents](#)

3.6.17 LPG Info and Tools

This section allows Authorized users to view the following components:

- [Table of Contents](#)
-

3.7 LPG Vessel Position List (VPL) Report Management

This section displays general information about the Project Name project and will include the following components.

3.8 LPG VPL Subscriber Portal

This section will allow authorized users to participate in Project Name Studies and includes the following components:

- [My Project Name Home page](#)

3.9 LNG Administrative Dashboard

This section displays the LNG management console and allows Authorized users to manage LNG report data & LNG web portal content. The console provides access to the following input forms:

- LNG Industry Events & Notices
- LNG Articles
- LNG Shipping Data
 - [US Imports](#)
 - [US Exports](#)
 - [International Lifting's](#)
- LNG Vessel Data
- LNG Economic Data
 - [Stuff](#)
 - Look Up Tables
 - [Netback](#)
 - [Freight Rate](#)
 - [Spot Prices](#)
- Search Functions
 - Shipping Data
 - Vessel Data
 - Subscriber Data
- Report Review
 - Current Published Report
 - Draft Report
 - Archived Reports
- LPG Tools
 - LPG Dashboard
 - Current Published Report
 - Draft Report
 - Archived Reports

3.9.1.1 LNG Industry Events & Notices

This section allows [Authorized users to manage calendar events and includes the following components:](#)

- Event Type – from the range: Convention, Industry Event or Professional Notices – Required.
- Event Date – Required
- Title (one line – approx 75 characters) - Required
- Brief description (one line – approx 255 characters) - Optional
- “For More Info” link – (URL not displayed) – Optional. Clarification: Links to external URL open in a pop-up window.

3.9.1.2 LNG Articles (Regional?)

This section allows Authorized users to manage LNG news & editorial articles and includes the following components:

- **Articles**
 - Date/time stamp, system generated
 - Title (one line – approx 75 characters) - Required
 - Brief description (one line – approx 75 characters) - Required
 - Article Details - Required
 - Editorial content editor
 - MS Word style formatting tool bar(s)

3.9.1.3 Shipping Data (Regional?)

This section allows Authorized users to manage LNG Shipping Data and includes the following input forms:

- US Imports
- US Exports
- International Traffic
- LPG Vessel Data

3.9.1.3.1 US Imports Data Input Form

This section allows Authorized users to manage LPG US Imports Data and includes the following components:

- Display only:
 - Region
 - Coast – determined by Region
- Transport Date
- Vessel – Required
 - Auto-complete text entry field. Clarification: Text entries are dynamically compared to existing database records.

- Select menu
 - Link to Vessel entry form
- Source
- Destination
- Volume
 - CBM
 - MT
 - BCF
 - C3
 - C4
 - C3C4
 - NC4
 - IC4
- Participants
 - Buyer
 - Seller
- In/Out – Required
-
-

3.9.1.4 Economic Data

This template will display a XXXX input form including the following fields:

- Stuff
- Stuff

3.10 LNG Subscriber Portal

This section will allow authorized users to participate in Project Name Studies and includes the following components:

- [My Project Name Home page](#)
- [About the Project Name Study](#)

3.11 LNG VPL Report Management

This section displays general information about the Project Name project and will include the following components.

3.12 LNG VPL Subscriber Portal

This section will allow authorized users to participate in Project Name Studies and includes the following components:

- My Project Name Home page

3.13 Conversion/Reference Tables Management

This section displays general information about LPG & LNG conversions and displays the following tables:

- Conversion Factors for Commercial Application
- Specification Products at Atmospheric Pressure
- Feedstock Necessary to Produce 1 billion Pounds of Ethylene
- Typical Iso/Normal Ration in Exported Mixed Butane
- Specification Iso and Normal Butane for Waterborne Export
- LPG Mix for Waterborne Export
- Other Conversion Factors
- Glossary/Definitions

3.14 Administrative User Management

The application will allow Administrators to manage (Add/Edit/Delete) user records and user roles allowing access the application.

3.14.1 User Roles

The application will support multiple user roles (permissions) and will provide different levels of accessibility for each role. User roles include: Public, Registered, Subscriber, and Administrator.

- **Public** - Restricted view only (no logon required)
- **Subscriber** – Access to the Subscriber Portal(s) (logon required)
 - May include any combination of: LNG, LNG Vessel Positioning Listing, LPG, LPG Vessel Positioning Listing
- **Administrator** – Access to the Administrator functions by role (logon required)
 - Web content management
 - Report tools: input forms, graph generation & editorial content
 - Subscriber management
 - account authorization
 - account management
 - User Administration

3.14.2 User Administration

The application will allow authorized users to manage (Add/Edit/Delete) user records:

- First Name – Required
- Last Name – Required

4 Data Design

The application connects to a Microsoft SQL 2005 server database. The database resides on a Hosted server with only the Ports necessary to provide communication through any firewalls to the web server open.

4.1 Database Security

Authenticated Users will only be authorized to access the database through the web application. The database will internally maintain the user IDs and Passwords of individuals authorized to access the system. The application will validate user ID and Password against the database. The passwords stored in the database will be encrypted in order to prevent unauthorized access to the application. An SQL connection is made dynamically with a connection string to protect authentication credentials.

4.2 Waterborne Database

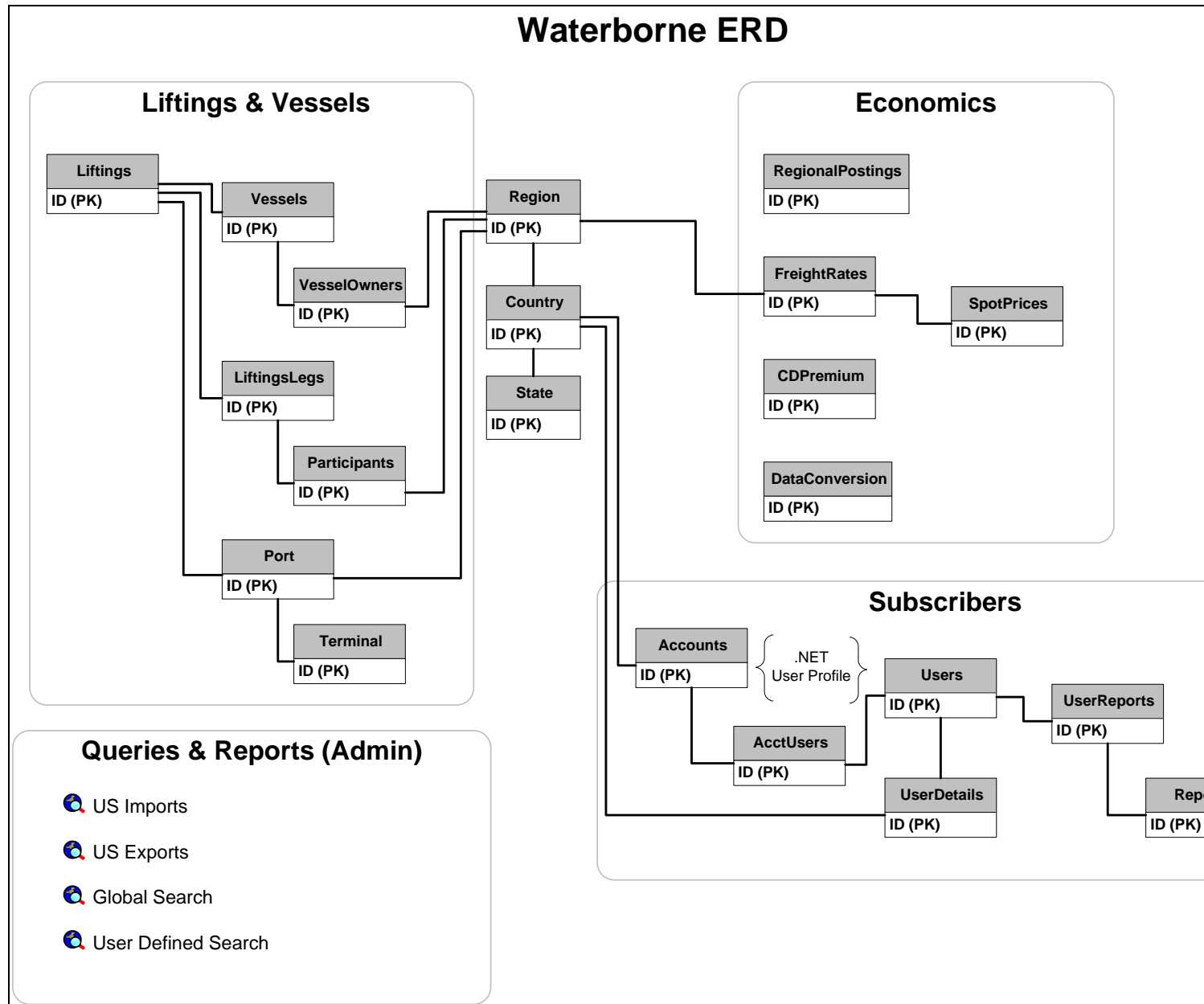
The Waterborne Database is comprised of five (5) primary components:

- Corporate Website CMS
- LPG Reports
- LNG Reports
- Subscriber/subscriptions
- Administrative User accounts

4.3 Entity Relationship Diagram (ERD) Legend:

- **PK** = Primary key
- **FK** = Foreign Key (Primary key in another table)
- **Bold** = Required Field
- **UI** = Unique Constraint

4.4 High Level Entity Relationship Diagram



4.5 Corporate CMS Data Dictionary

The Corporate Website CMS database consists of the following tables:

- **Page:** Contains website Page information
- **Paragraphs:** Contains Paragraph text
- **ParagraphLinks:** Contains Paragraph links
- **TextBlocks:** Contains copy Text information
- **Buttons:** Contains navigation Button information
- **Links:** Contains URL link information

The database tables are shown below:

4.5.1 Page

Name	Type	Description
ID (PK)	Integer	Primary Key , Unique Identifier
ParentID (FK)	Integer	Unique Identifier, self referencing table
DisplayName	nvarchar (256)	Page Display Name – Required
Title	nvarchar (max)	Page Title Name – Required
Path	nvarchar (max)	Page navigation/relationship
TitlesEditable	Bit	editable Y/N – Required

4.5.2 Paragraphs

Name	Type	Description
ID (PK)	Integer	Primary Key , Unique Identifier
DisplayName	nvarchar (256)	Page Display Name – Required
Text	nvarchar (max)	Page Text – Required
Header	nvarchar (max)	Page Header - Required
TextIsEditable	Bit	editable Y/N – Required
HeaderIsEditable	Bit	editable Y/N – Required

4.5.3 ParagraphLinks

Name	Type	Description
ID (PK)	Integer	Primary Key , Unique Identifier
DisplayName	nvarchar (256)	Page Display Name – Required
ParagraphText	nvarchar (max)	Text – Required
ParagraphHeader	nvarchar (max)	Header – Required
LinkText	nvarchar (max)	Link text – Required
LinkURL	nvarchar (max)	Link URL - Required
ParagraphTextIsEditable	Bit	editable Y/N – Required
ParagraphHeaderIsEditable	Bit	editable Y/N – Required
LinkTextIsEditable	Bit	editable Y/N – Required
LinkURLIsEditable	Bit	editable Y/N – Required
HeaderIsLink	Bit	editable Y/N – Required

4.5.4 TextBlocks

Name	Type	Description
ID (PK)	Integer	Primary Key , Unique Identifier
DisplayName	nvarchar (256)	Page Display Name – Required
Text	nvarchar (max)	Text - Required
TextIsEditable	Bit	editable Y/N – Required

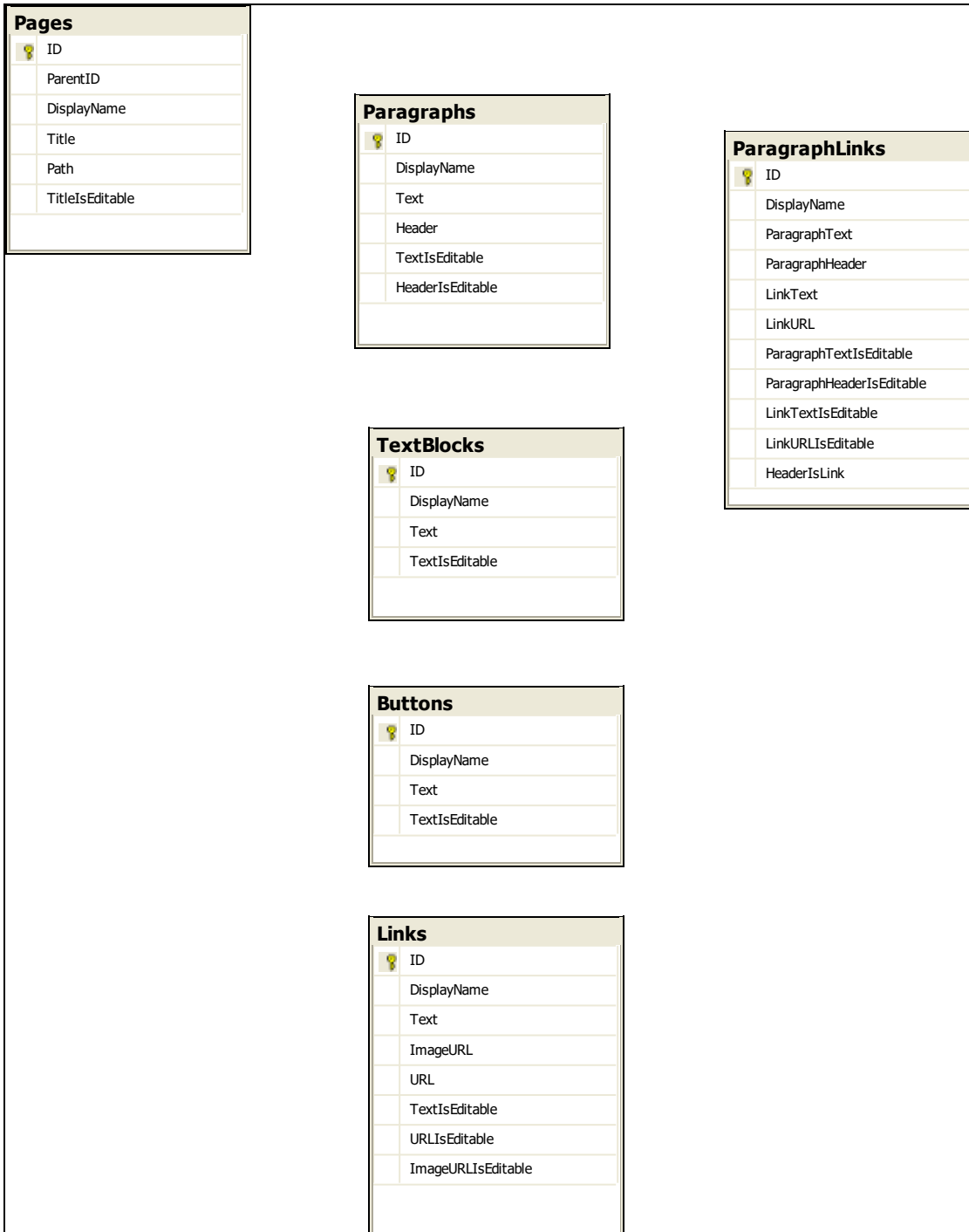
4.5.5 Buttons

Name	Type	Description
ID (PK)	Integer	Primary Key , Unique Identifier
DisplayName	nvarchar (256)	Display Name – Required
Text	nvarchar (max)	Text – Required
TextIsEditable	Bit	editable Y/N – Required

4.5.6 Links

Name	Type	Description
ID (PK)	Integer	Primary Key , Unique Identifier
DisplayName	nvarchar (256)	Page Display Name – Required
Text	nvarchar (max)	Text – Required
ImageURL	nvarchar (max)	Image URL
URL	nvarchar (max)	Text URL
TextIsEditable	Bit	editable Y/N – Required
URLIsEditable	Bit	editable Y/N – Required
ImageURLIsEditable	Bit	editable Y/N – Required

4.5.7 Corporate CMS Schema



4.6 LPG Reports Data Dictionary

The Corporate Website CMS database consists of the following tables:

- *LPG*Liftings: **Contains LPG shipment (Lifting) information**
- *Page*: **Contains website Page information**
-

The database tables are shown below:

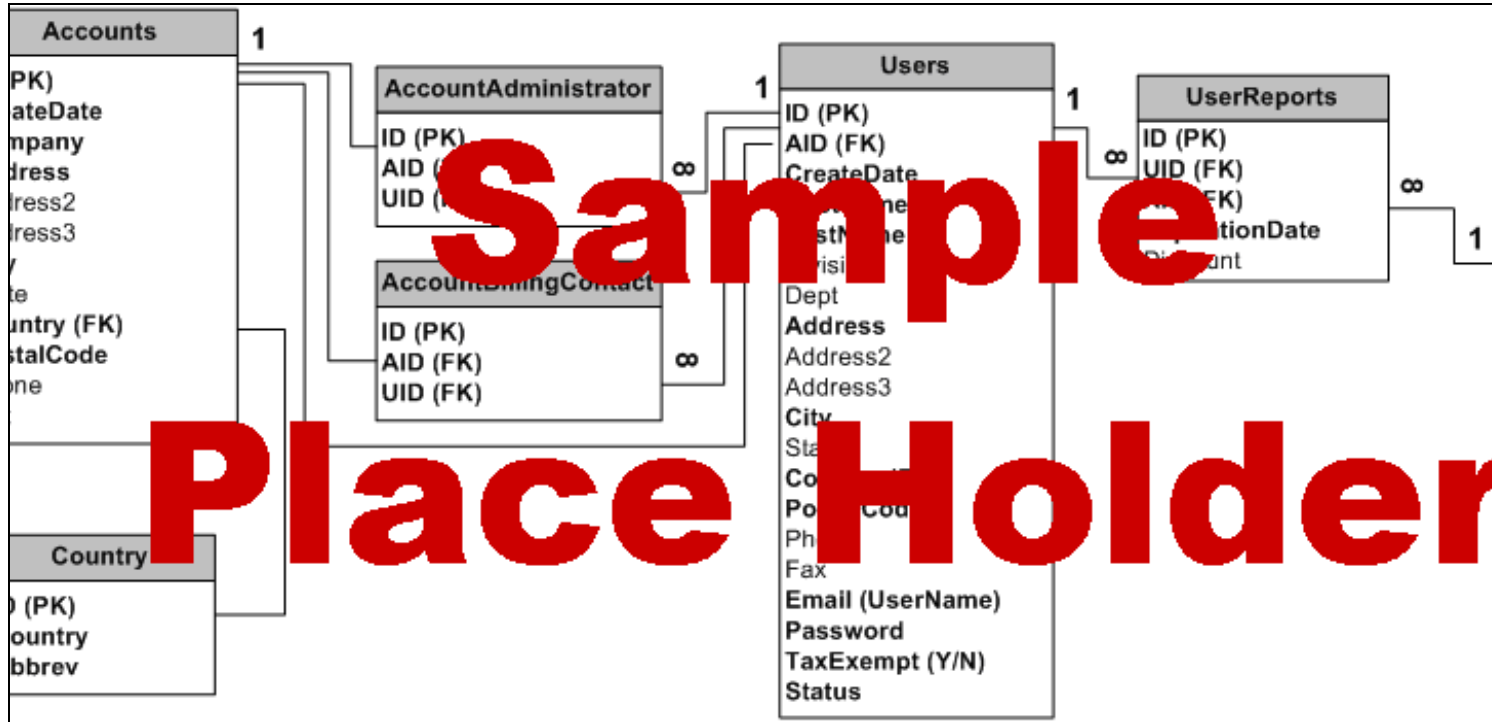
4.6.1 LPGliftings

Name	Type	Description
ID (PK)	Autonumber	Primary Key, Unique Identifier
Date	Date/Time	Shipment Date
SID	Int	Source Port ID
VID	Int	Vessel ID
DID	Int	Destination ID
STID	Int	Source Terminal ID
PID	Int	Participant record id (buyers/sellers)
C3	Number	Volume in Metric Tons (MT)
C4	Number	Volume in Metric Tons (MT)
C3C4	Number	Volume in Metric Tons (MT)
NC4	Number	Volume in Metric Tons (MT)
IC4	Number	Volume in Metric Tons (MT)
InOut	Bit(1)	Inbound / Outbound

4.6.2 Lookup tables

Name	Type	Description
ID (PK)	Integer	Primary Key, Unique News/Event Identifier

4.6.3 LPG Reports Data Schema



4.7 LNG Reports Data Dictionary

The Corporate Website CMS database consists of the following tables:

- **LNGLiftings:** Contains LNG shipment (Lifting) information
- **Page:** Contains website Page information
-

The database tables are shown below:

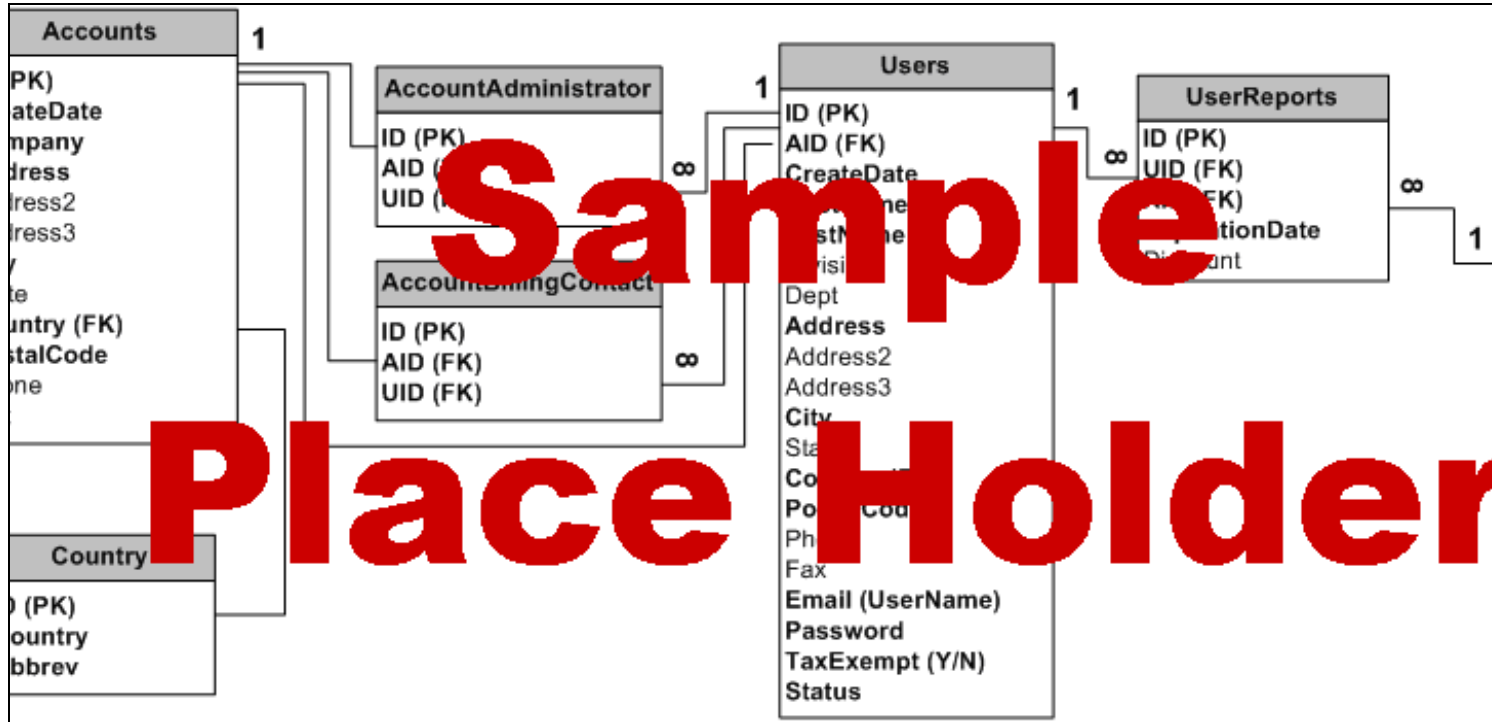
4.7.1 LNGLiftings

Name	Type	Description
ID (PK)	Autonumber	Primary Key, Unique Identifier
Date	Date/Time	Shipment Date
SID	Int	Source Port ID
VID	Int	Vessel ID
DID	Int	Destination ID
STID	Int	Source Terminal ID
PID	Int	Participant record id (buyers/sellers)
C3	Number	Volume in Metric Tons (MT)
C4	Number	Volume in Metric Tons (MT)
C3C4	Number	Volume in Metric Tons (MT)
NC4	Number	Volume in Metric Tons (MT)
IC4	Number	Volume in Metric Tons (MT)
InOut	Bit(1)	Inbound / Outbound

4.7.2 Lookup tables

Name	Type	Description
ID (PK)	Integer	Primary Key, Unique News/Event Identifier

4.7.3 LNG Reports Data Schema



4.8 Subscriber Data Dictionary

The Subscriber database consists of the following tables:

- **Accounts:** Contains Account & Billing information
- **Users:** Contains User (subscriber) information
- **AccountAdministrator:** Contains Account Administrator User id
- **AccountBillingContact:** Contains Account Billing Contact User id
- **Reports:** Look-up table, contains Report information
- **UserReports:** Contains User Subscription relationships

The database tables are shown below:

4.8.1 Account

Name	Type	Description
ID (PK)	Autonumber	Account Identification number (Primary Key)
CreationDate	Date/Time	Record Creation Date - Required
Company	Varchar (255)	Company Name - Required
Address	Varchar (255)	- Required
Address2	Varchar (255)	
Address3	Varchar (255)	To support international addresses
City	Varchar (45)	- Required
State	Varchar (2)	Two character state abbreviation
Country (FK)	Int	Country code from Country look-up table – Required

Phone	Varchar (20)	Support for International numbers
Fax	Varchar (20)	Support for International numbers

4.8.2 Users

Name	Type	Description
ID	AutoNumber	Identification number (Primary Key)
AID (FK)	Int	Account ID
CreationDate	Date/Time	Record Creation Date - Required
FistName	Varchar (255)	- Required
LastName	Varchar (255)	- Required
Division	Varchar (45)	Division
Department	Varchar (45)	Department
Address	Varchar (255)	- Required
Address2	Varchar (255)	
Address3	Varchar (255)	To support international addresses
City	Varchar (45)	- Required
State	Varchar (2)	Two character state abbreviation
Country (FK)	Int	Country code from Country look-up table - Required

Phone	Varchar (20)	Support for International numbers
Fax	Varchar (20)	Support for International numbers
Email	Varchar (255)	Used as login ID - Required
Password	Varchar (25)	- Required
TaxExempt	Bit (Y/N)	Texas only – Required
Status	Varchar (1)	A=Active, I=Inactive, E=Expired – Required

4.8.3 AccountAdministrator

Name	Type	Description
ID (PK)	autoNumber	Identification number (Primary Key)
AID (FK)	Int	Account ID – Required
UID (FK)	Int	User ID – Required

4.8.4 AccountBillingContact

Name	Type	Description
ID (PK)	autoNumber	Identification number (Primary Key)
AID (FK)	Int	Account ID – Required
UID (FK)	Int	User ID – Required

4.8.5 Reports

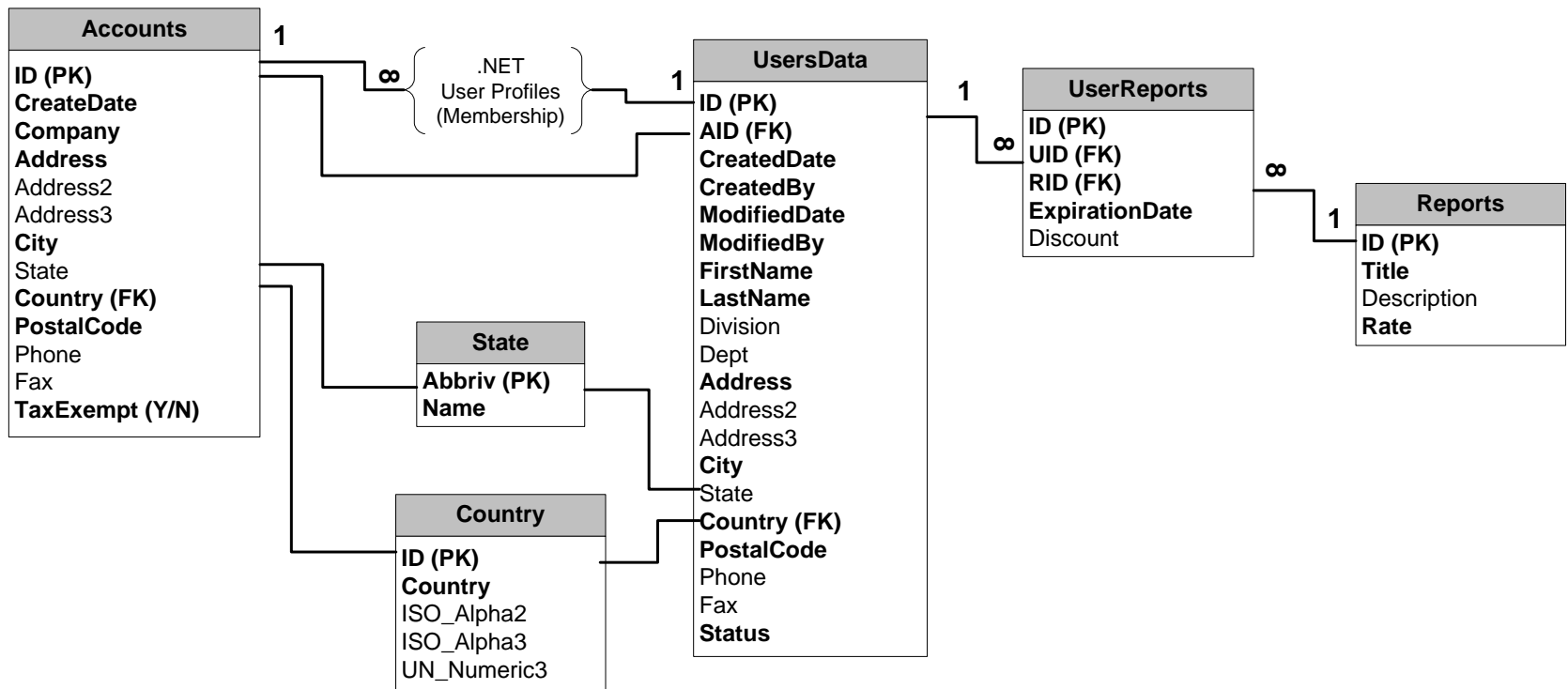
Name	Type	Description
ID (PK)	autoNumber	Identification number (Primary Key)
Title	Varchar(45)	Report Title – Required
ShortDescription	Varchar(255)	ShortDescription
Rate	Money	Report Standard Price – Required

4.8.6 UserReports (Subscriptions)

Name	Type	Description
ID	AutoNumber	Identification number (Primary Key)
SID (FK)	Int	Subscriber ID– Required
RID (FK)	Int	Report ID– Required
ExpirationDate	Date/Time	– Required
Discount	Int	Discount rate, Corp discounts applied at the individual user level

4.8.7 Waterborne Energy Subscriber Database Enterprise Relationship Diagram (ERD)

Waterborne Subscriber Database ERD



4.9 User Accounts Data Dictionary (Use .NET User Profiles?)

The User Accounts database consists of the following tables:

- **Users:** *Contains User information*
- **Roles:** *Contains User Role information*

The database tables are shown below:

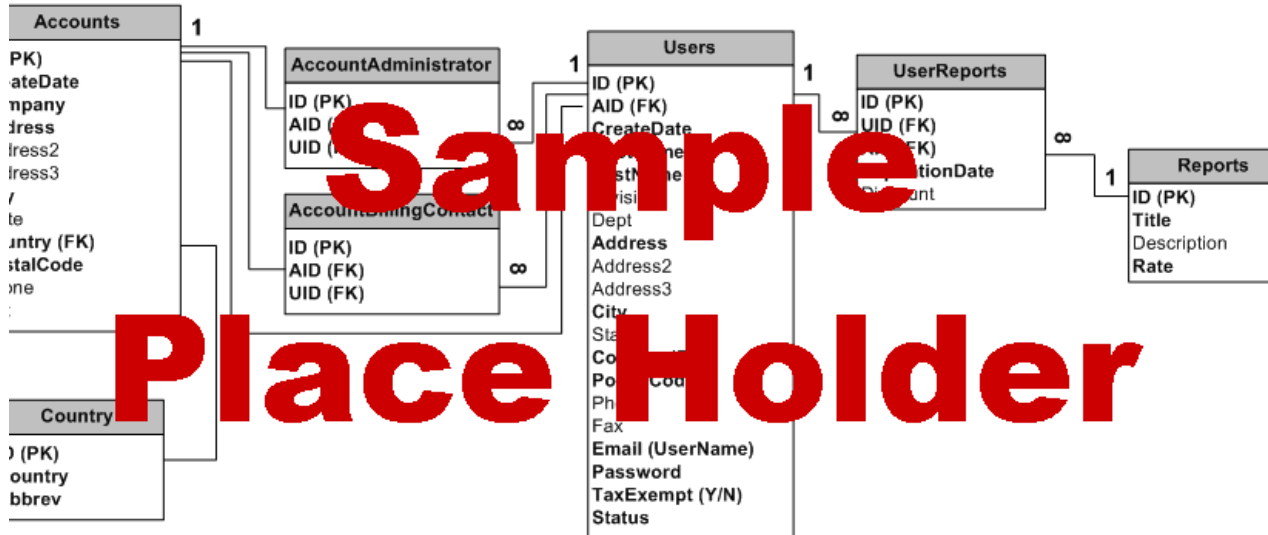
4.9.1 Users

Name	Type	Description
UID (PK)	Integer	Primary Key , Unique User Identifier
Role	Varchar (50)	User Role as string for historical reference, from the Roles look-up table - Required
SID (PK)	Integer	Foreign Key , Study Identifier - Required
FirstName	Varchar (100)	Users First Name – Required
LastName	Varchar (100)	Users First Name – Required
Email	Varchar (255)	Users Email address – Required
DOB	Date/Time	Users Date of Birth – Required
Gender	Varchar (1) (M/F)	Users Gender, from the range M=Male, F=Female – Required
UserName	Varchar (25)	User Account Login Name – Required
Password	Varchar (25)	User Account Login Password – Required

4.9.2 Roles

Name	Type	Description
Role (U1)	Varchar (50)	Unique User Roles – Required , Unique constraint

4.9.3 User Accounts Data Schema



Sample
Place Holder

5 Reuse Considerations

Six Foot Studios has a collection of code snippets that were developed for projects that may be utilized in the application. Examples of code re-use that may be utilized include: User login validation routines, mail routine to send email through an SMTP server, user friendly error handling and dynamically generated "system error" email messages to the application administrator. The application will pre-process input form fields and perform field validation prior to updating or inserting data.

6 Error Handling

Error are handled on the client side by displaying pre-formatted, template generated error messages. Visual Basic, C#, ASP .Net and /or JavaScript code processes all error handling, and performs client side data validation of required form fields. Validation displays error messages if required fields are left blank. When a system error occurs (e.g. ODBC error or script error), an email is sent to the developer for timely resolution. Redundant server validation may also be utilized in accordance with Section 508 requirements. When an email error occurs while processing system generated email messages, the application shall capture the error and continue processing.

7 Assumptions/Risks

7.1 Assumptions

- Portions of the application/web site shall be developed in ColdFusion programming language.
- Web server and SQL server are properly maintained and administered by ODIN (Outsourcing Desktop Initiative for NASA).
- The Microsoft .Net framework must be installed on the web server.
- Web server and SQL server are online and available to AMBER network users.
- COD continues to fund the ODIN database seat and ODIN web seat.
- All updates to the web site design shall be via ADSC only.
- The application shall be covered by the COD web site security plan.
- The production environment supports ColdFusion 4.5 or better, SQL Server 7.0 or better, and Internet Information Service 4.0 or better.
- The Customer is to provide third party URLs. Any URLs not provided shall be displayed as inactive links.

7.2 Risks

- Unauthorized user access to the web server directories and files can result in undesired modifications to the content, structure, and layout of the web site.
- Unauthorized user access to the SQL server database can result in loss of data integrity and in data corruption.

8.2 Future Enhancements

Global Pricing Map	Phase II
Vessel Library	Phase II
Vessel "Baseball card" Summaries	Phase II link to Vessel Library
Calendar	Phase II
USGC	United States Gulf Coast (Gulf of Mexico)
USD	United States Dollars
\$/MT	US Dollars per Metric ton
cts/gal	US Cents per Gallon
\$/bbl	US Dollars per Barrel