

Southern Haulers Design System Guide

Overview

This document describes the comprehensive design system implemented for the Southern Haulers NextJS monorepo, based on professional UI/UX principles from industry-leading design videos.

Design Principles

1. Depth System (3-Shadows Pattern)

The depth system creates visual hierarchy through tonal layers and balanced shadows, making interfaces feel more professional and engaging.

Tonal Layers

We use HSL-based tonal layers that automatically adapt between light and dark modes:

Light Mode:

- --L-bg: 98% - Background layer
- --L-surface: 100% - Surface layer (cards, panels)
- --L-elevated: 100% - Elevated elements (buttons)
- --L-highlight: 96% - Highlighted elements

Dark Mode:

- --L-bg: 14% - Background layer
- --L-surface: 18% - Surface layer
- --L-elevated: 24% - Elevated elements
- --L-highlight: 32% - Highlighted elements

Shadow System

Three types of shadows create depth:

1. **Rim Light** - Soft inset highlight on top edge

```
css
--rim-light: inset 0 1px 0 rgba(255,255,255,.25);
```

2. **Ambient Shadow** - Soft shadow for resting state

```
css
--shadow-ambient: 0 8px 24px rgba(0, 0, 0, 0.12);
```

3. **Hover Shadow** - Stronger shadow for hover state

```
css
--shadow-hover: 0 10px 30px rgba(0, 0, 0, 0.16);
```

4. **Press Shadow** - Compressed shadow for active state

```
css
--shadow-press: 0 3px 8px rgba(0, 0, 0, 0.18);
```

Usage Classes

Card Depth:

```
<div className="card-depth">
  <!-- Card content -->
</div>
```

Button Depth:

```
<button className="button-depth">
  Click me
</button>
```

Input Depth:

```
<input className="input-depth" />
```

2. Typography System

Fluid, responsive typography system using `clamp()` for optimal readability across all screen sizes.

Type Scale

```
--step--1: clamp(0.80rem, 0.75rem + 0.2vw, 0.90rem); /* Small labels */
--step-0:  clamp(0.94rem, 0.90rem + 0.2vw, 1.00rem); /* Body text */
--step-1:  clamp(1.13rem, 1.05rem + 0.3vw, 1.25rem); /* H6/H5 */
--step-2:  clamp(1.35rem, 1.20rem + 0.5vw, 1.50rem); /* H4/H3 */
--step-3:  clamp(1.62rem, 1.40rem + 0.8vw, 1.88rem); /* H2 */
--step-4:  clamp(1.94rem, 1.60rem + 1.2vw, 2.35rem); /* H1 */
```

Optical Spacing

```
--lh-tight: 1.1; /* For large headings */
--lh-base: 1.45; /* For body text */
--ls-tight: -0.01em; /* For large headings */
--ls-base: 0.01em; /* For labels/buttons */
```

Text Contrast

```
--text-L: 14%; /* Primary text (light mode) / 86% (dark mode) */
--muted-L: 36%; /* Secondary text (light mode) / 64% (dark mode) */
```

3. Light/Dark Mode

The design system automatically adapts to light and dark modes by inverting lightness values:

- Background layers go from dark to light
- Text contrast goes from light to dark
- Shadows adjust opacity for visibility

Users can toggle between modes using the theme toggle in the navigation.

Components

New Components

1. Container LFD Tracker

Location: apps/web/components/container-lfd-tracker.tsx

Features:

- Container number input with validation
- Port/terminal dropdown (8 locations)
- Real-time container status
- Last Free Day (LFD) tracking with warnings
- Demurrage/detention risk alerts
- Schedule pickup and quote request actions

Usage:

```
import { ContainerLFDTracker } from '../components/container-lfd-tracker';  
  
<ContainerLFDTracker />
```

2. Enhanced Quote Calculator

Location: apps/web/components/quote-calculator.tsx

Features:

- South Georgia Hubs dropdown
- 8 port/terminal options
- Container type selection (20ft, 40ft, 40ft HC)
- Container condition (Dry/Refrigerated)
- Real-time pricing calculation: $\$2.25/\text{mile} \times 2$ (round-trip)
- Distance input with automatic calculation

Pricing Formula:

$$\text{Total} = \$2.25 \times \text{distance} \times 2 \text{ (round-trip)}$$

3. Services Section

Location: apps/web/components/services-section.tsx

Displays all Southern Haulers services with:

- Professional service cards with depth effects
- Service-specific icons and descriptions
- Feature tags
- Hover animations with elevation changes

Services include:

- Bulk Transport
- Container Drayage
- Flatbed
- Over the Road (Dryvan) Trucking
- Agricultural (in Bulk)

Enhanced Components

Theme Toggle

Location: `apps/web/components/theme-toggle.tsx`

Enhanced with:

- Depth system styling
- Smooth icon rotation animations
- Persistent theme preference in localStorage
- Accessibility improvements

Pages

Track Page

Location: `apps/web/app/track/page.tsx`

Features:

- Tabbed interface for Shipment Tracking and Container LFD Tracker
- Seamless switching between tracking modes
- Depth system applied to all UI elements

CSS Architecture

Global Styles

Location: `apps/web/app/globals.css`

Structure:

1. Base CSS variables (depth system, typography)
2. Base styles (HTML elements)
3. Utility classes (depth effects, animations)

Tailwind Integration

The design system works seamlessly with Tailwind CSS:

- Custom CSS variables for depth system
- Utility classes for quick application
- Compatible with existing Tailwind utilities

Best Practices

1. Applying Depth to Cards

```
<div className="card-depth rounded-lg border bg-card p-6">  
  <!-- Content -->  
</div>
```

2. Interactive Elements

```
<button className="button-depth rounded-lg bg-primary text-primary-foreground px-6 py-3">
  Click Me
</button>
```

3. Form Inputs

```
<input
  className="input-depth w-full px-4 py-3 rounded-lg border border-input bg-background"
  type="text"
/>
```

4. Consistent Light Source

Always maintain a consistent light source from the top. Shadows should be below elements, and rim lights should be on top edges.

5. Hover States

Add hover states to interactive elements to indicate affordance:

```
<div className="card-depth hover:shadow-hover transition-all">
  <!-- Content -->
</div>
```

Accessibility

1. Color Contrast

- All text meets WCAG AA standards
- High contrast mode supported
- Theme toggle for user preference

2. Keyboard Navigation

- All interactive elements are keyboard accessible
- Focus states visible and clear
- Tab order logical and intuitive

3. Screen Readers

- Semantic HTML used throughout
- ARIA labels where needed
- Alt text for all images

Performance

1. CSS Custom Properties

Using CSS variables ensures:

- Minimal CSS overhead

- Fast theme switching
- Easy maintenance

2. Typography

Using `clamp()` for fluid typography:

- No JavaScript required
- Automatic scaling
- Better performance

3. Animations

All animations use CSS transforms and opacity:

- GPU-accelerated
- 60fps performance
- Smooth transitions

Future Enhancements

Planned Improvements

1. Component Library Documentation

- Storybook integration
- Interactive component showcase
- Code examples

2. Design Tokens

- Export tokens for Figma
- Automated design-to-code pipeline
- Version control for design system

3. Additional Utility Classes

- More depth variations
- Animation presets
- Spacing scale

4. Accessibility Enhancements

- High contrast mode
- Reduced motion preferences
- Focus trap utilities

Resources

Design References

- Video A: “The Easy Way to Fix Boring UIs” - Depth system principles
 - Video B: “The 80% of UI Design – Typography” - Typography hierarchy
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