



# **Design Principles for Maps**

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### What does this map say?

![](_page_8_Picture_1.jpeg)

Please squint

# What stands out the most? The least?

### What does this map say?

![](_page_9_Picture_1.jpeg)

#### Please squint

# What stands out the most? The least?

#### Where do our design patterns come from?

123DesigningBeyondApplying allwith CRAPCRAPthese rules

![](_page_11_Picture_0.jpeg)

From Robin Williams, not *Robin Williams* 

## The purpose of design

![](_page_12_Picture_1.jpeg)

#### To communicate

Convey a message

#### To organize

Set a flow for the eye & mind

#### To attract

Gather and maintain interest

![](_page_13_Picture_1.jpeg)

Robin Williams, *The Non-Designer's Design Book*, 2003

![](_page_14_Picture_1.jpeg)

# Repetition

![](_page_15_Picture_1.jpeg)

# Contrast Repetition Alignment

Robin Williams, *The Non-Designer's Design Book*, 2003

![](_page_16_Picture_1.jpeg)

Robin Williams, *The Non-Designer's Design Book*, 2003

![](_page_17_Picture_1.jpeg)

Make different information types distinctly different

Slight differences can cause confusion

![](_page_18_Figure_1.jpeg)

Make different information types distinctly different

Slight differences can cause confusion

![](_page_19_Figure_1.jpeg)

Make different information types distinctly different

Slight differences can cause confusion

![](_page_20_Picture_1.jpeg)

Make different information types distinctly different

Slight differences can cause confusion

### Repetition

![](_page_21_Figure_1.jpeg)

Give similar information types similar characteristics

Establish relationships, consistency

Too much repetition can be boring

![](_page_22_Picture_1.jpeg)

Provides a visual anchor for the eye

Always find something to align with

Make the page appear unified

![](_page_23_Picture_1.jpeg)

Provides a visual anchor for the eye

Always find something to align with

Make the page appear unified

![](_page_24_Picture_1.jpeg)

Invisible lines provide visual connections between elements and overall balance to a page or screen.

Provides a visual anchor for the eye

Always find something to align with

For ultimate usability, everything should align with, burp, everything.

Make the page appear unified

![](_page_25_Picture_1.jpeg)

## Proximity

![](_page_26_Picture_1.jpeg)

Proximity implies a relationship

Elements in close proximity become one unit

Similar information types should be connected visually

![](_page_27_Picture_0.jpeg)

# **Beyond CRAP**

Other design principles to live by

#### Size does matter

![](_page_28_Figure_1.jpeg)

![](_page_28_Picture_2.jpeg)

Adapt to screen estate (desktop, mobile, tablet)

How much information does the user need at any given time?

#### Size does matter

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2	Chicago \$318 Denver \$225 St. Louis \$287	New York	Score: 12 / 30 - 134 reviews 3-star hotel \$245	
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Adapt to screen estate (desktop, mobile, tablet)

How much information does the user need at any given time?

#### **Position does matter**

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Boise \$278	Chicago \$318	Toronto \$483	The Manhattan at Times . Score: 12 / 30 - 134 review 3-star hotel	<b>\$292</b> ws
San Francisco Las Vegas \$138	Denver \$226 St. Louis \$287 Nashvile \$344		Wellington Hotel Score: 14 / 30 - 108 review 3-star hotel	<b>\$245</b> WS
Los Angeles \$136 Tuci Hermi	Abuquerque S288 Ontario al 9000 on \$294 Dallas \$298 Atlanta \$349 sillo \$649 Houston \$380	More hotel	s near New York » Pric	æs per night

Position map above the fold so users do not need to scroll to the map

#### The message matters

![](_page_31_Figure_1.jpeg)

What's the **primary message** of the map?

What's the 'thesis' or **focus of attention**?

Just because you have the data **doesn't** mean you have to show it all

#### Make it easy to scan

![](_page_32_Figure_1.jpeg)

People don't **read** maps, they **scan** them

**Optimize** your maps for scanning

Distinguish the **'thesis'** of the map from the **base contents** of the map

#### Make it easy to scan

![](_page_33_Figure_1.jpeg)

People don't **read** maps, they **scan** them

**Optimize** your maps for scanning

Distinguish the **'thesis'** of the map from the **base contents** of the map

#### Do a *blur* test

![](_page_34_Picture_1.jpeg)

Take your map or your page and **squint** so you can barely see it

What stands out **the most**? The least?

Is the **message** of your map appearing prominently enough?

#### Do a *blur* test

![](_page_35_Picture_1.jpeg)

Take your map or your page and **squint** so you can barely see it

What stands out **the most**? The least?

Is the **message** of your map appearing prominently enough?

#### Do a vocalization test

![](_page_36_Picture_1.jpeg)

If every element could **speak** to identify themselves:

What would the map **say**?

How **loud** would the map be?

#### Make it obvious

![](_page_37_Picture_1.jpeg)

Ask yourself:

"What's the map supposed to **say**?"

"How will people **use** the map?

"What are the **outcomes** of them using the map?"

### Make it obvious

![](_page_38_Picture_1.jpeg)

#### Ask yourself:

"What's the map supposed to **say**?"

"How will people **use** the map?

"What are the **outcomes** of them using the map?"

#### Make it obvious

![](_page_39_Picture_1.jpeg)

#### Ask yourself:

"What's the map supposed to **say**?"

"How will people **use** the map?

"What are the **outcomes** of them using the map?"

#### So fresh and so clean

![](_page_40_Picture_1.jpeg)

Distinguish this 'thesis' of the map from the rest of the map

Remove 'visual traffic'

Test multiple zooms and regions

![](_page_41_Picture_0.jpeg)

# Applying all these rules

How to optimize your maps

![](_page_42_Picture_1.jpeg)

Use styled maps to simplify unnecessary detail

elementType:
 "labels"
visibility:
 "off"

![](_page_42_Picture_4.jpeg)

![](_page_43_Picture_1.jpeg)

Use styled maps to simplify unnecessary detail

featureType:
 "administrative"
elementType:
 "labels"
visibility:
 "on"

![](_page_44_Picture_1.jpeg)

Use styled maps to simplify unnecessary detail

```
featureType:
    "roads"
weight:
    0.8
```

![](_page_44_Picture_4.jpeg)

![](_page_45_Picture_1.jpeg)

Use styled maps to simplify unnecessary detail

featureType:
 "roads"
visibility:
 "on"

![](_page_46_Picture_1.jpeg)

Use styled maps to simplify unnecessary detail

featureType:
 "roads"
visibility:
 "simplified"

![](_page_47_Picture_1.jpeg)

Use styled maps to simplify unnecessary detail

featureType:
 "roads"
visibility:
 "off"

![](_page_48_Figure_1.jpeg)

![](_page_48_Figure_2.jpeg)

![](_page_48_Figure_3.jpeg)

![](_page_48_Figure_4.jpeg)

![](_page_48_Figure_5.jpeg)

![](_page_49_Picture_1.jpeg)

![](_page_50_Figure_1.jpeg)

# Turn off *everything* then slowly reintroduce relevant details

![](_page_52_Picture_1.jpeg)

![](_page_53_Picture_1.jpeg)

![](_page_54_Picture_1.jpeg)

![](_page_55_Figure_1.jpeg)

```
var AERO_PATH = 'M33,21.999v-2.748L20,10.5V2.7..';
var MAX PAX = 44e6;
```

```
var scale = airportData.pax / MAX_PAX + 0.25;
new google.maps.Marker({
    map: map,
    position: airportData.pos,
    icon: {
        path: AERO_PATH,
        scale: scale,
        strokeWeight: 2.0 * scale
    }
});
```

![](_page_57_Figure_1.jpeg)

Allow the user to filter the content they care about

![](_page_58_Picture_0.jpeg)

# Takeaways

#### Take stock of the elements

![](_page_59_Picture_1.jpeg)

# Take stock of the elements

![](_page_60_Picture_1.jpeg)

Ask yourself:

What elements should appear closer to the user? **(higher contrast)** 

What elements should appear farther from the user? **(lower contrast)** 

#### Take stock of the colors

![](_page_61_Figure_1.jpeg)

Try to limit the number of exceptions

Establish a consistent policy

### Take stock of the strokes

![](_page_62_Picture_1.jpeg)

#### Take stock of the strokes

![](_page_63_Picture_1.jpeg)

![](_page_64_Picture_0.jpeg)

CRAP: Contrast. Repetition. Alignment. Proximity.
Maps: People don't read them. They scan them.
Ask: Who is your user? How will they use your map?
Emphasize: What is the message of your map?
Goal: Minimize visual traffic.

![](_page_65_Picture_0.jpeg)

![](_page_65_Picture_1.jpeg)

Dave Day +daveday

#### Patrick Hofmann

#phofmann +pman

![](_page_66_Picture_0.jpeg)

#### developers.google.com/maps

![](_page_67_Picture_0.jpeg)