Illustrating Data: Infographics

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Marc Roberts, City of Livermore

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What is an **Infographic?**

A visual representation of information or data.

Infographics make information easier to comprehend at a glance.

Information + Graphic = **Info**graphic

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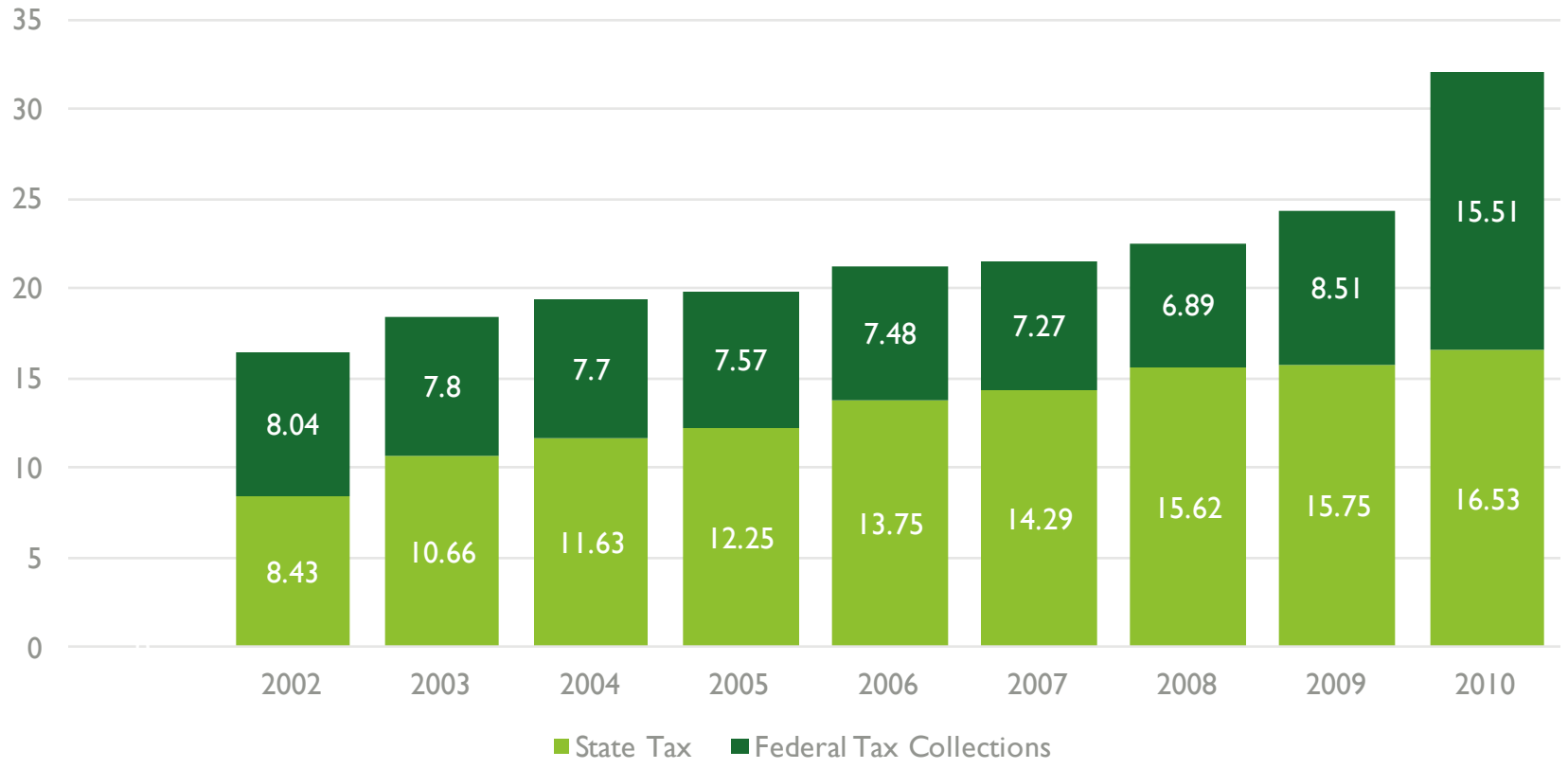
U.S. History of Taxation on Cigarettes

In Billions of Dollars

Years	State Tax Collections	Federal Tax Collections
2002	8.43	8.04
2003	10.66	7.8
2004	11.63	7.7
2005	12.25	7.57
2006	13.75	7.48
2007	14.29	7.27
2008	15.62	6.89
2009	15.75	8.51
2010	16.53	15.51

U.S. History of Taxation on Cigarettes

In Billions of Dollars



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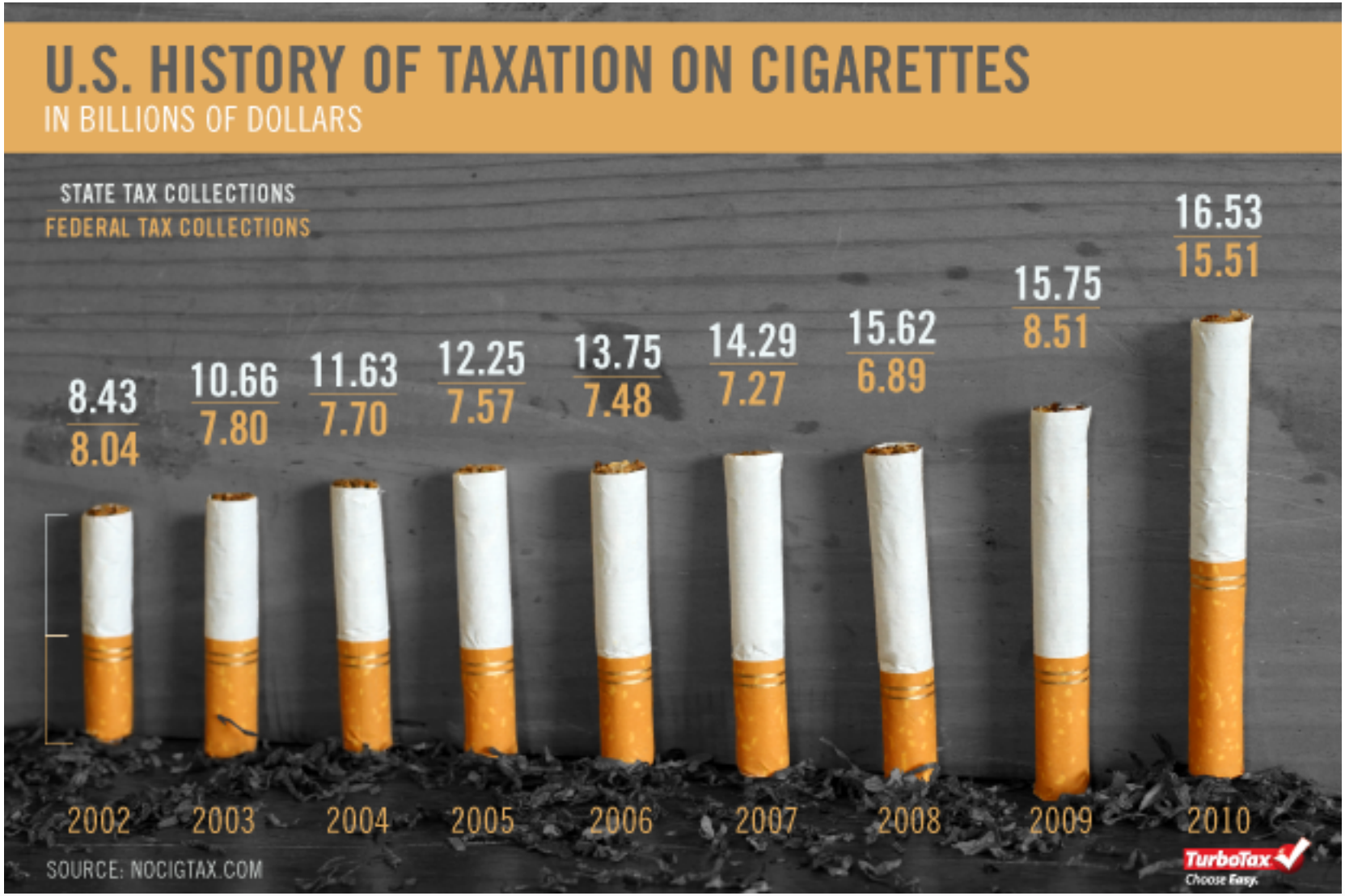

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Why are Infographics important?

In todays world, we create more information in two days then all of mankind had created up until 2003.

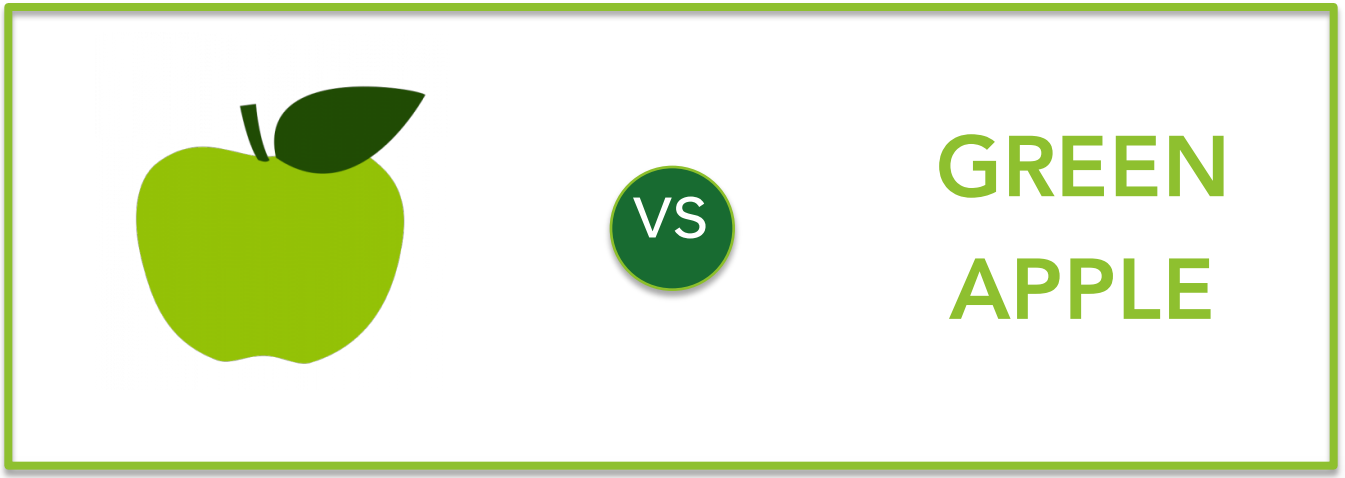
- Google CEO, Eric Schmidt (2010)

Why are Infographics important?

- Information overload
- Fast paced society
- Attract and entice readers to dig deeper
- It makes dull information interesting and easier to digest

Infographic Benefits

- It is faster and easier to visually communicate something then it is to read it

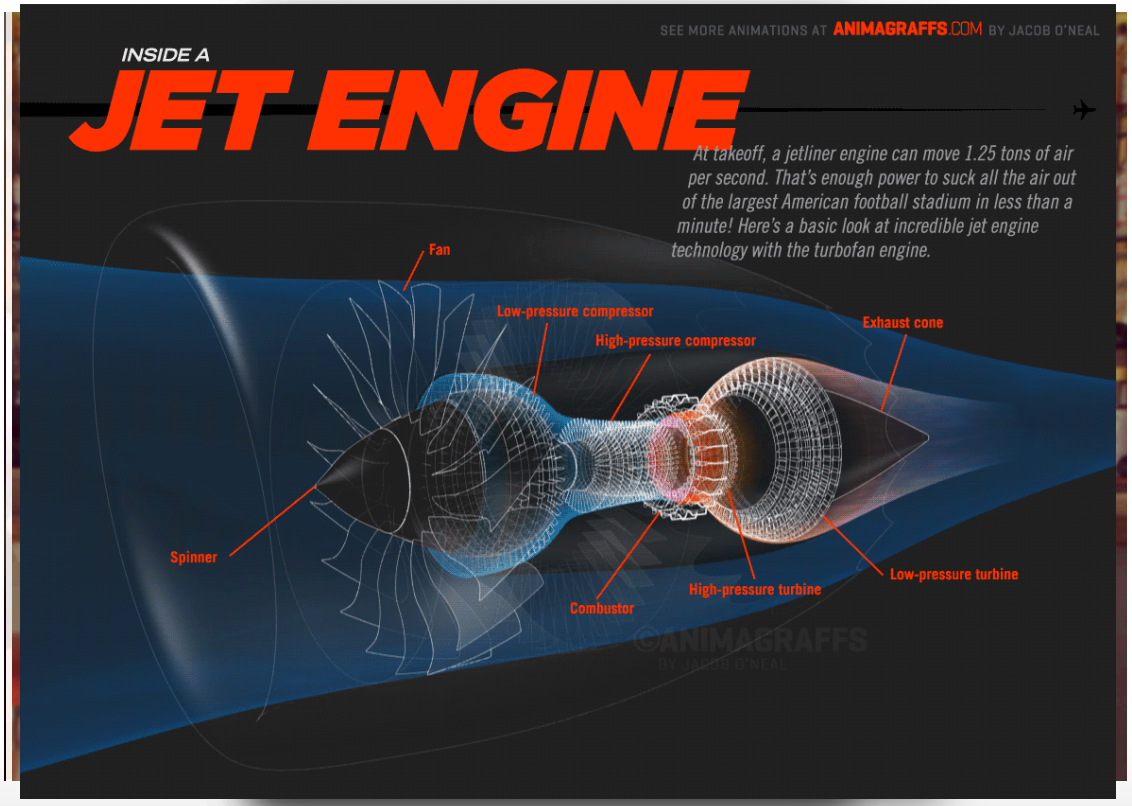


Infographic Benefits

- Transforms passive readers into active participators as they explore your data and draw their own conclusions
- Can easily be shared *(especially through social media)*
  - Viewers are more likely to share visual content - maximizing your reach

Types of Infographics

1. Statistical
2. Informational
3. Timeline
4. Process
5. Geographic
6. Comparison
7. Hierarchy
8. Interactive
9. Motion & Video



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How can Infographics be used?

- Enhance community engagement
- Increase awareness
- Inform elected officials on items such as budget and policy proposals

How can Infographics be used?

- About Us Page
- Visual Press Releases
- Newsletters
- Editorial
- Presentations
- Annual Reports
- To explain a workflow or process

Where does your Property Tax Dollar go?

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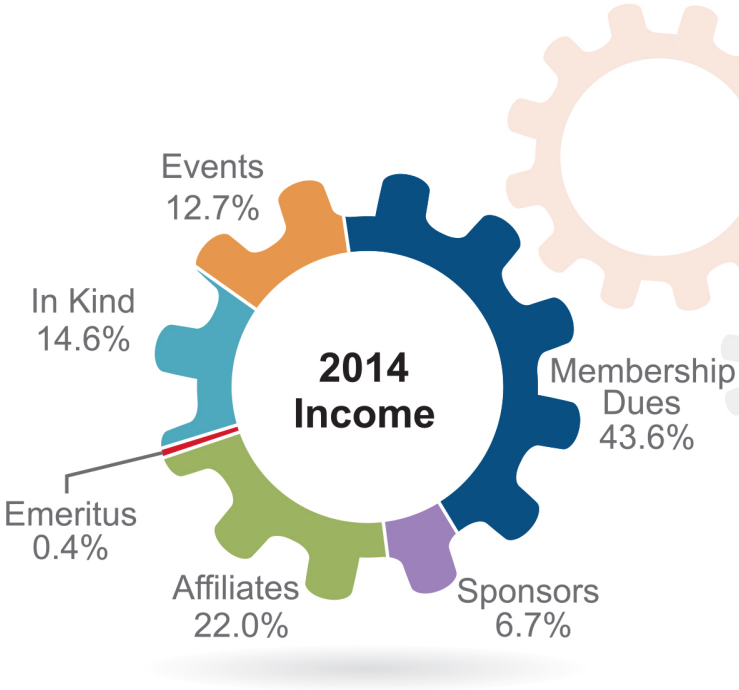
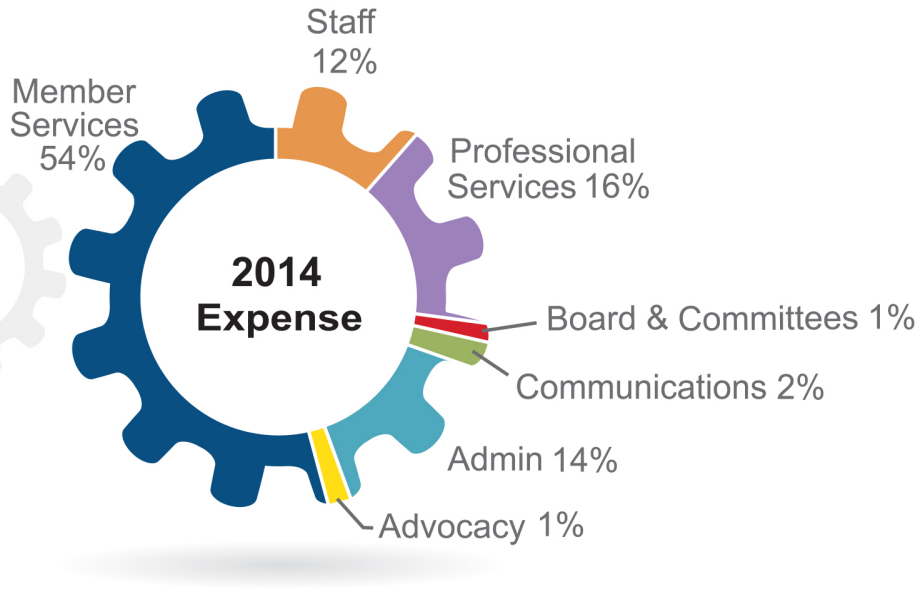
FINANCIALS

Fiscal prudence and innovation drives ACC-OC's financial model. As a result, the organization has leveraged city dues by nearly 2:1 in 2014. This means increased services and static dues. For a full budget, please visit www.accoc.org





2:1 ACC-OC has nearly doubled every dollar of city dues in other income, making your investment go further

0% Dues Increase in 4 years of service

500+ Number of cities, organizations, businesses, non-profits, educational institutions and individuals invested in the success of good public policy

CITY BUDGET BREAKDOWN

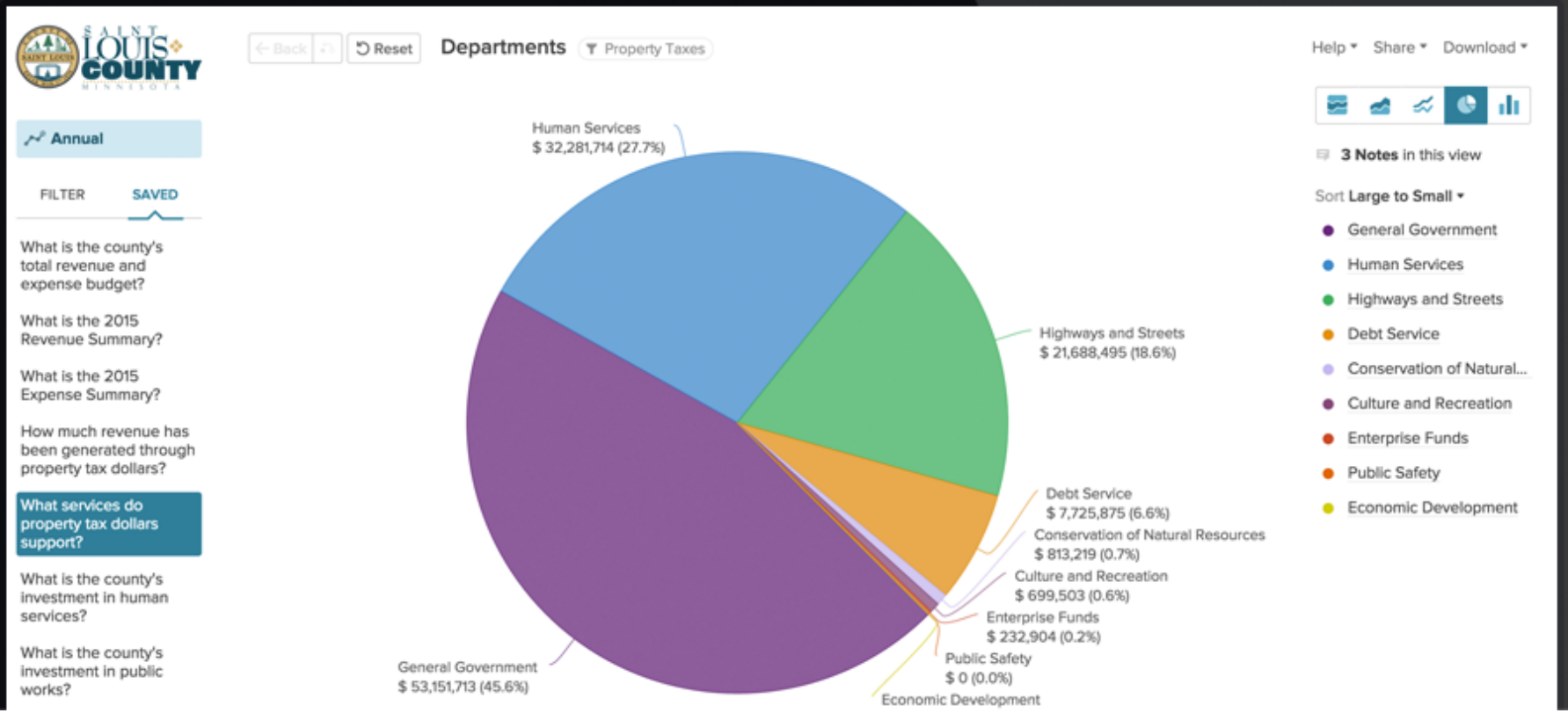
On July 21, 2014, the City Council formally adopted its Annual Budget and Financial Plan for Fiscal Year 2014-15. The following provides an overview of the City's revenues and spending.

From July 2014 through June 2015, the City will receive approximately $12.1 million in various revenues and will expend about $11.3 million for municipal operations. In addition, $6.2 million will be used for various capital improvements throughout the community. By the end of the fiscal year, it is estimated that the City will have approximately $14.3 million in its reserve fund, or roughly 125% of its annual operating budget.

Expenditures Include

The City is proud of its long tradition of fiscal responsibility and sustainability. While so many other cities have faced significant hardship in the wake of the "Great Recession," the City has balanced its budgets and maintained a very healthy reserve fund. Being good stewards of taxpayer dollars is one of the City Council's top priorities and that mindset is again reflected in this year's budget.

Residents can review the entire budget online at the City's website: www.lcf.ca.gov/finance/budget.



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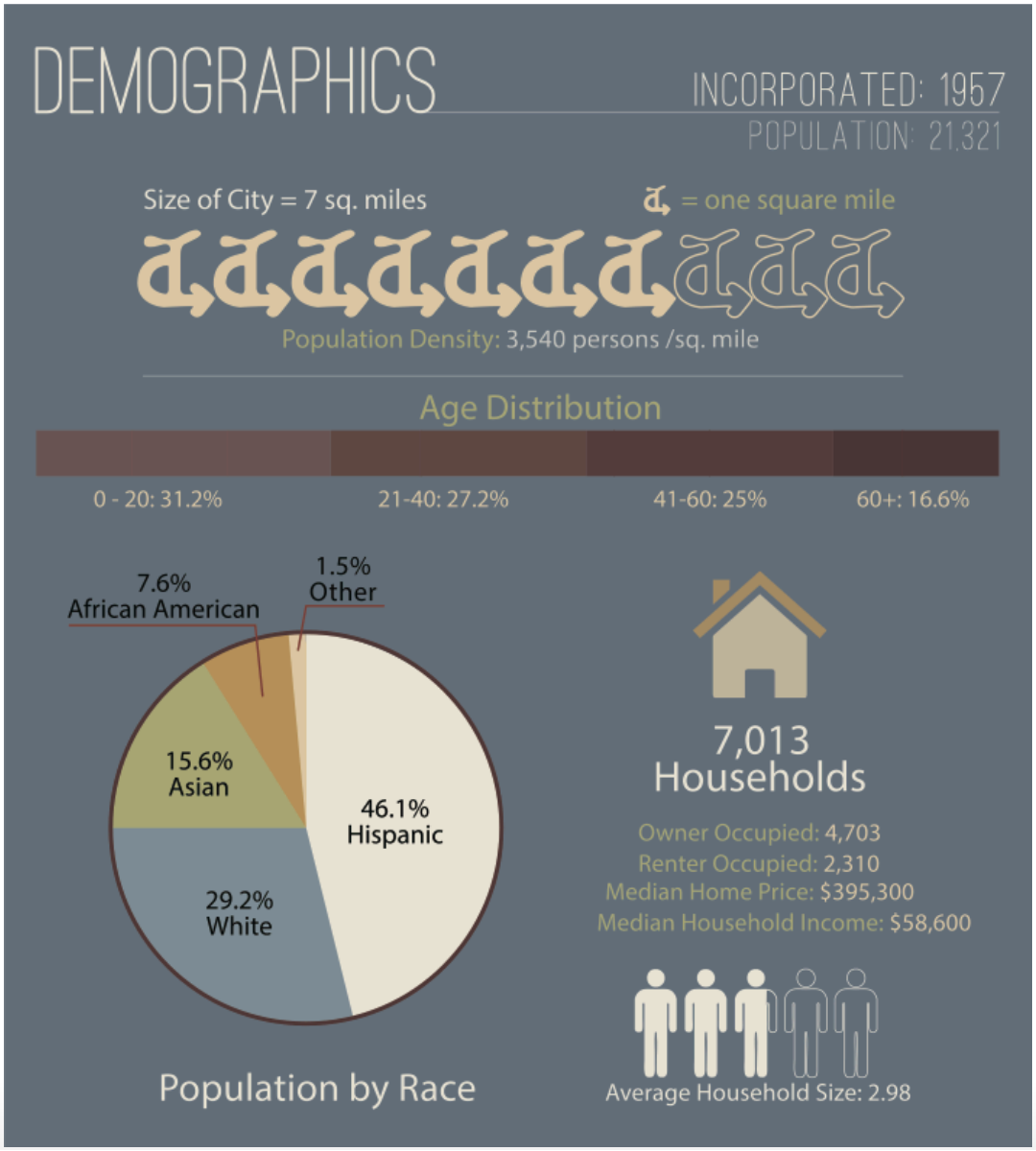

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TOP RETAIL SALES
(PER CAPITA)

1. Auto/Transportation	$ 7,970
2. General Consumer Goods	$ 6,037
3. Restaurants/Hotels	$ 1,496
4. Fuel/Service Stations	$ 1,406
5. Food/Drugs	$ 642
Sales Tax Rate:	9%
Annual Sales Tax:	$ 4,853,000
(fiscal year 2013-14)	

ANNUAL CONSUMER SPENDING

Total Consumer Spending	$ 436,000,000
Consumer Spending per HH	$ 53,564

CENTRAL LOCATION

BUSINESS INDEX

1. City of Duarte
2. Duarte Unified School District
3. Target
4. Walmart
5. Best Buy
6. Sonic
7. Nissan
8. The Old Spaghetti Factory
9. Rancho Duarte Golf Course

Recognized by the LAEDC as Los Angeles County's 2012 Most Business Friendly City, Duarte's low business license and permit fees, no utility user's tax, low property tax, multi-modal transit options, strategic access to the 210, 605, and 10 freeways, and the soon to open METRO Gold Line, have fostered a dynamic business environment.

Ranked as one of the San Gabriel Valley's safest communities, Duarte provides 54 miles of walkable, well- maintained streets amongst a variety of residential dwellings. Over 52 acres of open space and 14 parks create an ideal setting for any outdoor enthusiast or family outing.

Duarte, an ethnically diverse community, capitalizes on this strength and was recently recognized by the National League of Cities with a first place 2014 City Cultural Diversity Award.

Sources:
Claritas.com; City-Data.com; Hinderliter, DeLlamas and LAEDC Economic & Policy Analysis Group

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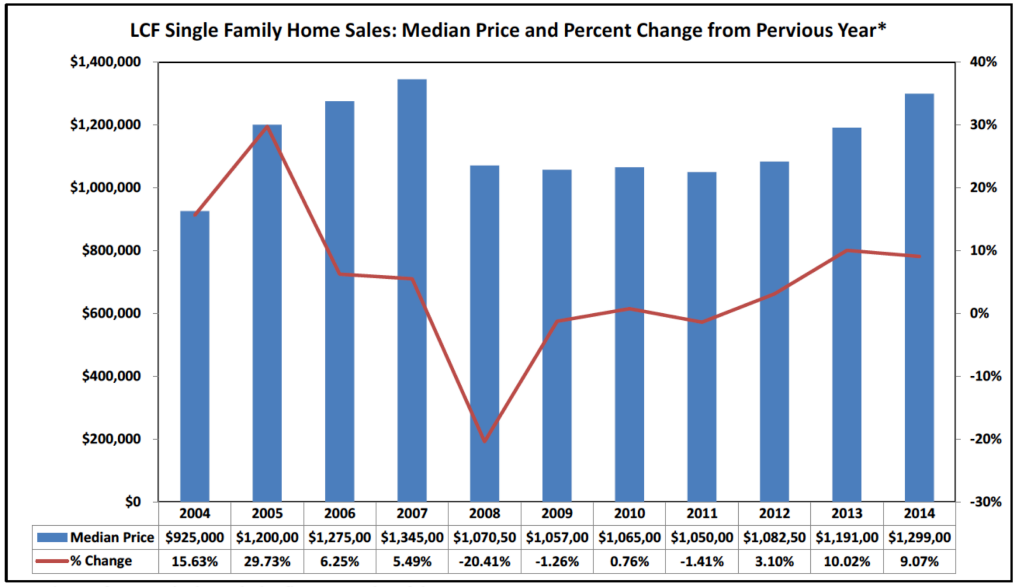


	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Median Price	$925,000	$1,200,00	$1,275,00	$1,345,00	$1,070,50	$1,057,00	$1,065,00	$1,050,00	$1,082,50	$1,191,00	$1,299,00
% Change	15.63%	29.73%	6.25%	5.49%	-20.41%	-1.26%	0.76%	-1.41%	3.10%	10.02%	9.07%

*Data for 2014 is through the first 7 months of the year

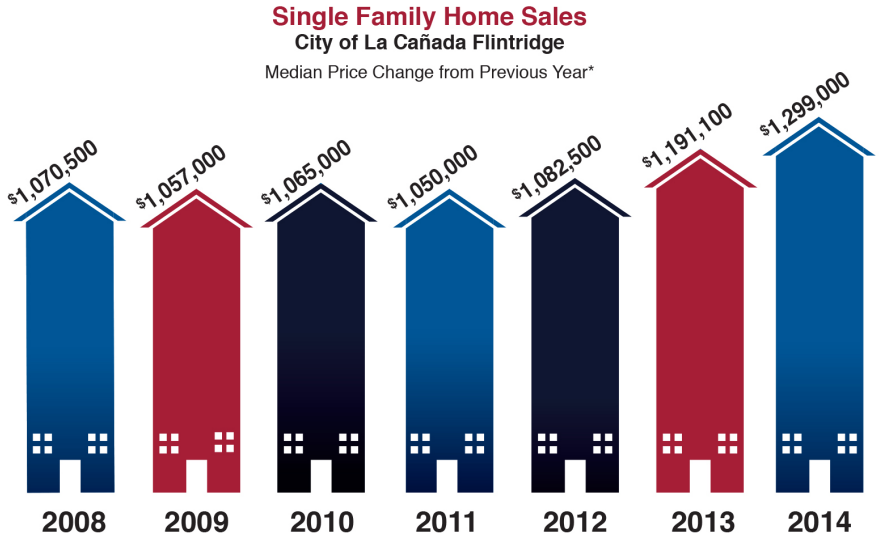


Figure 1

*Data for 2014 is through the first 7 months of the year

Limit outdoor water use to …

2 days per week

for

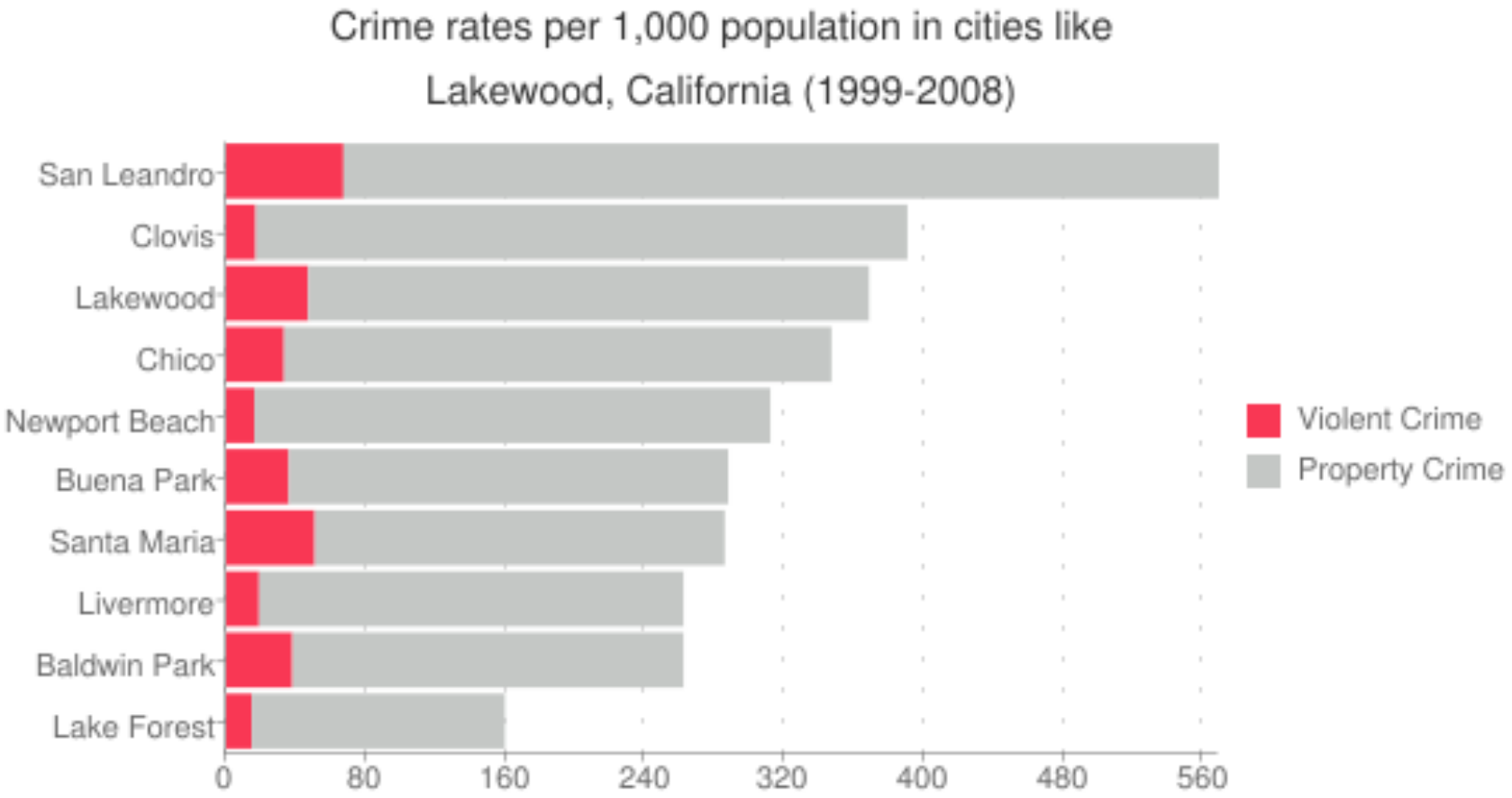
10 min per station

Useful Websites:

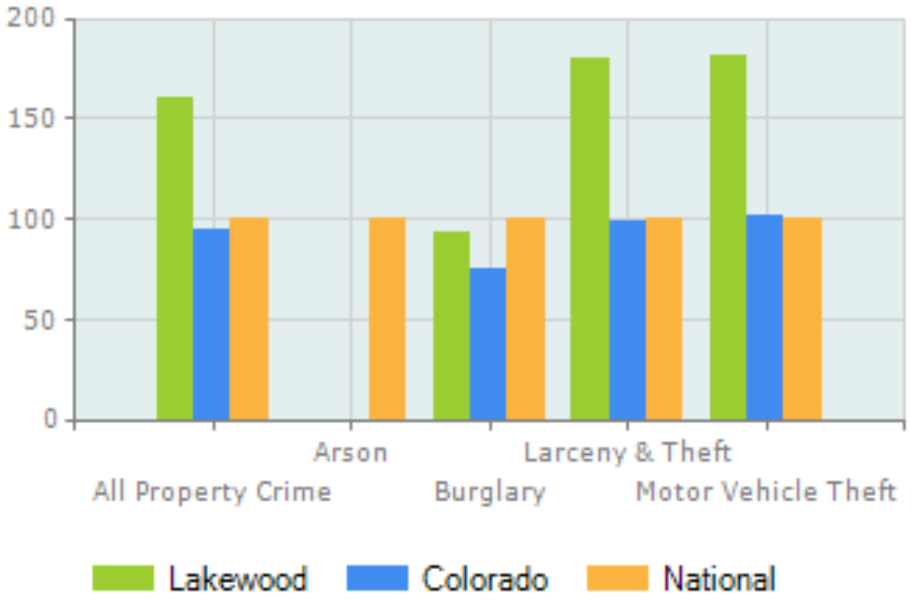
- bewaterwise.com
- waterboards.ca.gov
- saveourwater.com
- socalwatersmart.com

VALLEY WATER COMPANY
INCORPORATED 1910 ▪ LA CANADA FLINTRIDGE

818.790.5516
valleywatercompany.com


Crime rates per 1,000 population in cities like
Lakewood, California (1999-2008)
San Leandro
Clovis
Lakewood
Chico
Newport Beach
Buena Park
Santa Maria
Livermore
Baldwin Park
Lake Forest
0
80
160
240
320
400
480
560
Violent Crime
Property Crime

2012 Lakewood
Property Crime Comparison



Compared to U.S. average. (U.S. average equals 100)

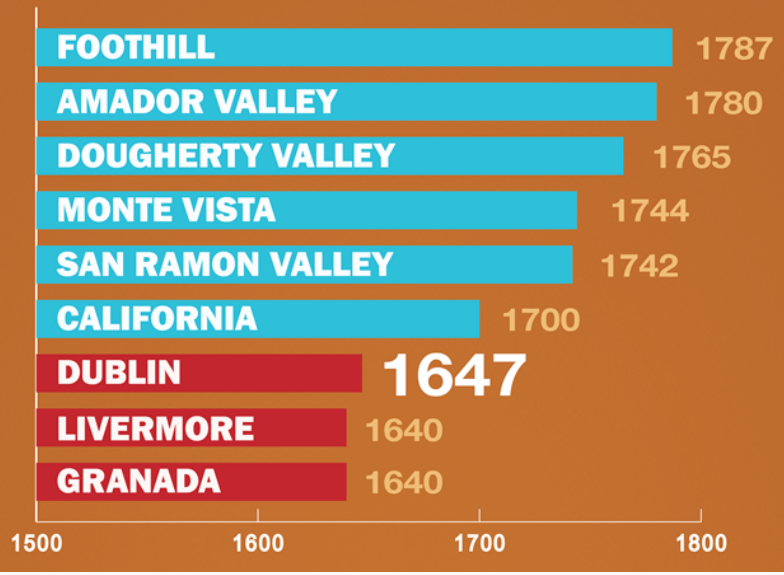
© 2015 CityRating.com - http://www.cityrating.com/crime-statistics/

DUBLIN HIGH SCHOOL

SAT REPORT

2011-2012 Edition

How does Dublin High stack up?



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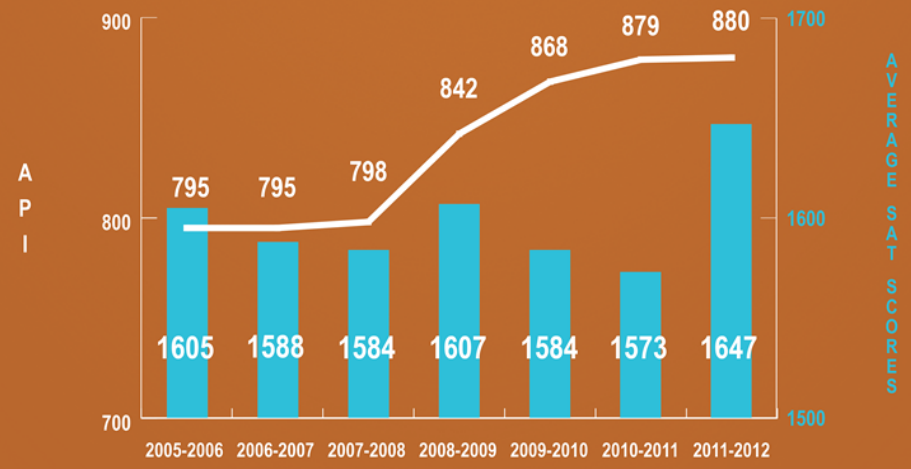
TRENDS IN API & SAT SCORES



SOURCE: CALIFORNIA DEPARTMENT OF EDUCATION

Reduce Water Costs / Save Money with Rainwater Tanks Harvesting Systems

Building an Infographic

1. Data Structure
2. Data Relationship
3. Editorialize
4. Identify Novelty
5. Visualize

Two Approaches

Explorative

Allows viewer to form their own conclusions or insights

Characteristics

- Minimalist
- Only includes elements that represent data
- Communicates information in the most clear and concise manner

VS

Narrative

Aims to lead viewers to a specific conclusion

Characteristics

- Illustrative
- Design-focused
- Appeals to viewers though engaging visuals
- Informs and entertains

Two Approaches

Explorative

Used in:

- Academic Research
- Science
- Business Intelligence
- Data Analysis

VS

Narrative

Used in:

- Publications
- Blogs
- Content Marketing
- Sales and Marketing Materials

Types of Data Relationships

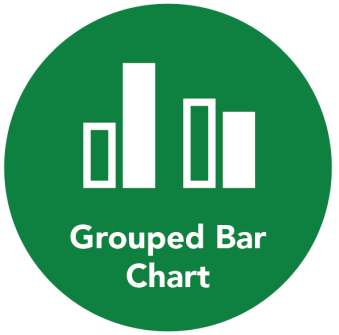
Find the best method to display your data

1. Nominal Comparison
2. Time Series
3. Ranking
4. Part-to-Whole
5. Spatial
6. Process

Types of Data Relationships

1. Nominal Comparison

Compares a subcategories' quantitative values



Types of Data Relationships

2. Time Series

Categorical quantitative values distributed across divisions of time

Shows trends, or how values change over time

Types of Data Relationships

3. Ranking

Communicates ranking from highest to lowest, or vice versa

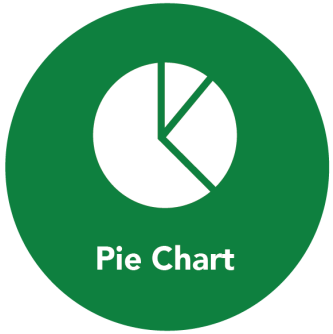
(vertical / horizontal)

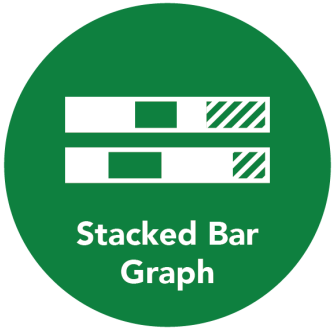
Types of Data Relationships

4. Part-to-Whole

Shows how a set of categorical subdivisions' quantitative values relate to one another as parts of a whole.

All parts must add up to 100%





Types of Data Relationships

5. Spatial

Shows how data relates to space and geography.

Types of Data Relationships

6. Process

Show steps involved in activities and multiple parties engaged in a process.

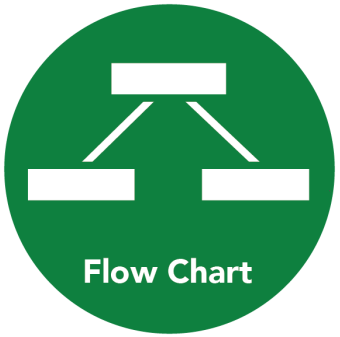


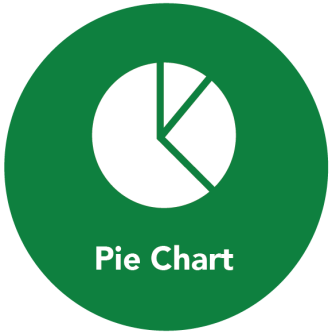
Illustration can be harmful when:

- **It distracts from the intended message**
- **When the illustration is misleading**
  - Accidental distortion of the data's display
    - Data is incomplete or meaningless

Do's and Don'ts

- **Horizontal Labels**
  - Keep labels horizontal as best as possible
  - Can abbreviate or go vertical with your bar chart to keep text horizontal
- **Use consistent colors**
  - 3-4 colors
- **Space Bars Appropriately**
  - About ½ the width of the bar in between ea. bar
- **Start the y-axis at zero**
  - If need be, the scale can be truncated but it needs to be clearly marked

Do's and Don'ts



Minimize pieces

- 5-7 categories in a pie chart

Don't use multiple pie charts for comparison

- **All data adds up to 100%**
- **Order Slices correctly**

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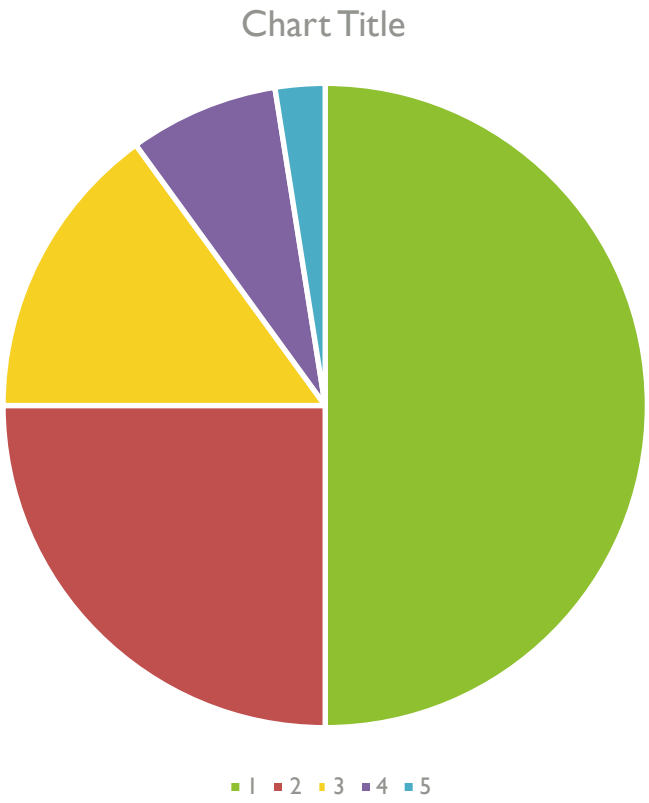


Chart Title
1
2
3
4
5

Chart Title
1
2
3
4
5

Do's and Don'ts

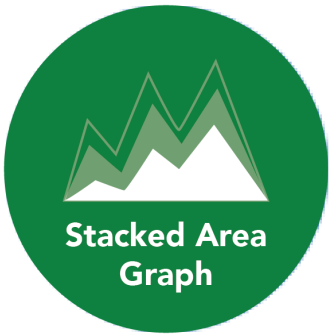
Use bold lines

- 5-7 categories in a pie chart

Include a zero in the baseline if possible

- **Keep it simple**
  - Try not to plot more than 4 lines
- **Label the lines directly**
- **Lines the correct height**

Do's and Don'ts



- **Layering**

  Layer your most volatile piece of data on top, least change on bottom
- **Start the y-axis at zero**
- **Keep it simple**
  - Don't display more than 4 categories
- **Use Transparent Colors**
- **Don't use area charts to display discrete data**

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Do's and Don'ts

- **Note Your Scale**
- Don't distort the data display
- **Keep Content Simple**
- **Use Radius Rings for Proximity**
- **Note Community Landmarks**

Finding a story in data

- Trends
- Seasonality
- Correlation
- Outliers

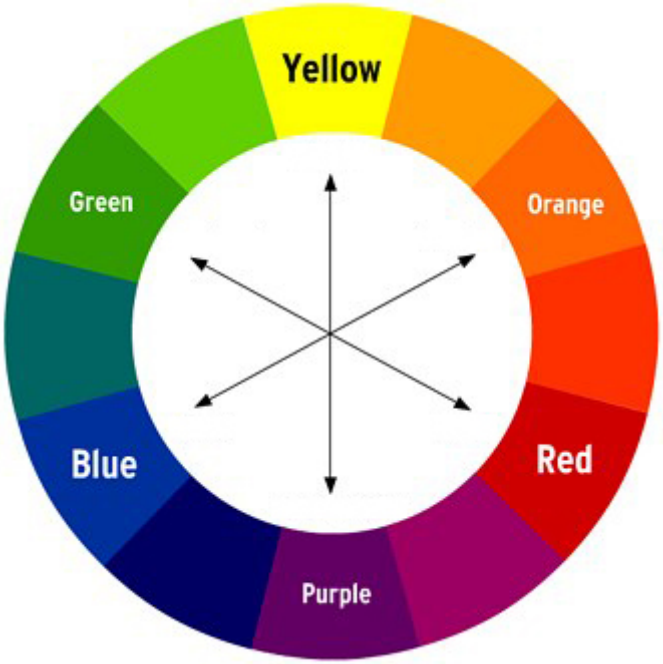
Visually Engaging Infographics

- Contrast
- Hierarchy
- Accuracy
- Relevance
- Truth

Contrast

Can be used to draw viewers attention.

Contrast creates tension.



Contrasting colors sit across from one another on the color wheel.

Contrast

Limit outdoor water use to …

2 days per week

for

10 min per station

Useful Websites:

- bewaterwise.com
- waterboards.ca.gov
- saveourwater.com
- socalwatersmart.com

VALLEY WATER COMPANY
INCORPORATED 1910 ▪ LA CANADA FLINTRIDGE

818.790.5516
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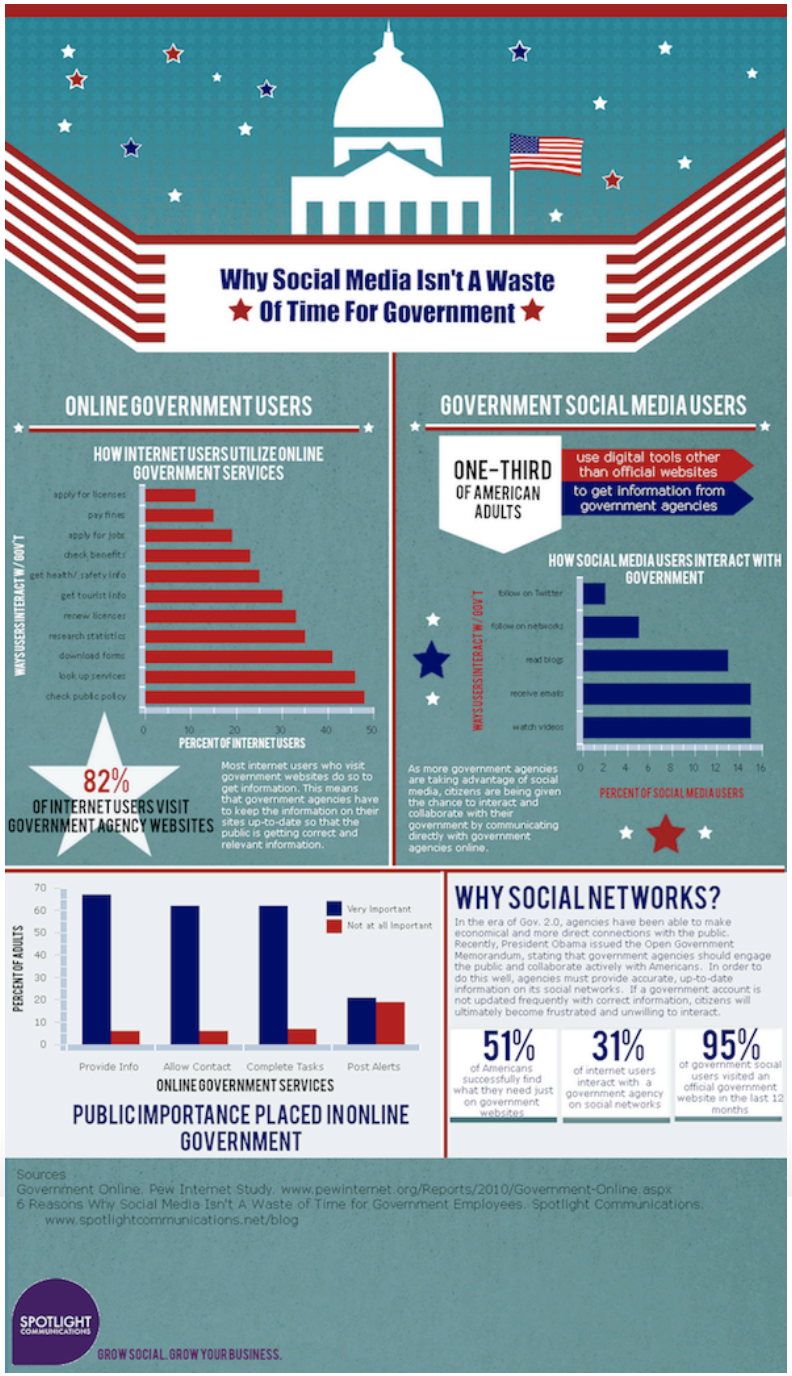
Contrast



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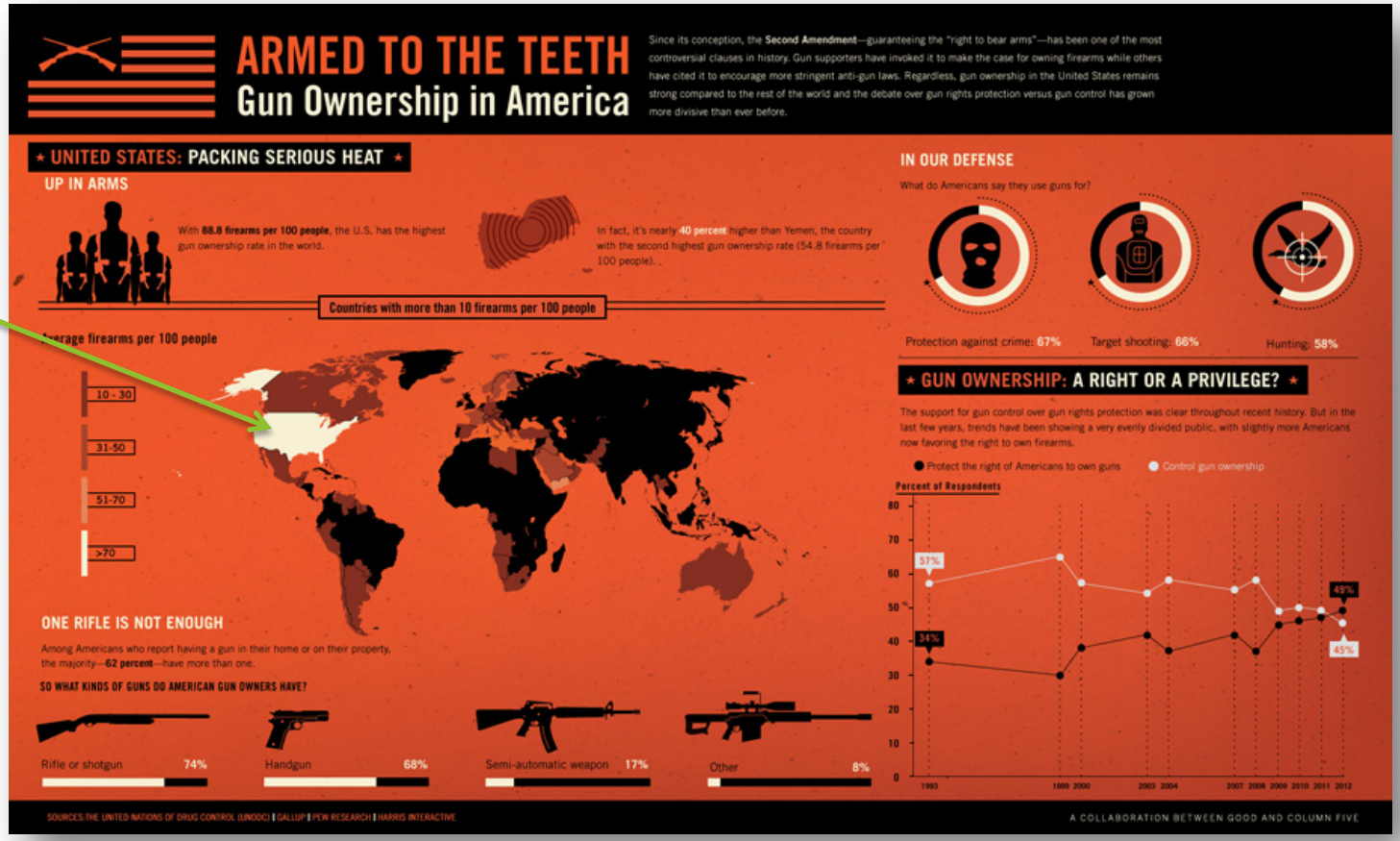
Contrast

Example of how color can be used to illustrate how much something stands out from the rest.



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Hierarchy

Leads the reader's eye, tells them what to read 1st, 2nd, 3rd, etc.

- Font size
- Weight
- Opacity
- Leading
- Position

Font size

ABC 28pt

ABC 20pt

ABC 11pt

Hierarchy

Leads the reader's eye, tells them what to read 1st, 2nd, 3rd, etc.

- Font size
- Weight
- Opacity
- Leading
- Position

Weight

ABC Bold

ABC Regular

ABC Light

Hierarchy

Leads the reader's eye, tells them what to read 1st, 2nd, 3rd, etc.

- Font size
- Weight
- Opacity
- Leading
- Position

Opacity

ABC 100% opacity

ABC 80% opacity

ABC 40% opacity

Hierarchy

Leads the reader's eye, tells them what to read 1st, 2nd, 3rd, etc.

- Font size
- Weight
- Opacity
- Leading
- Position

Leading

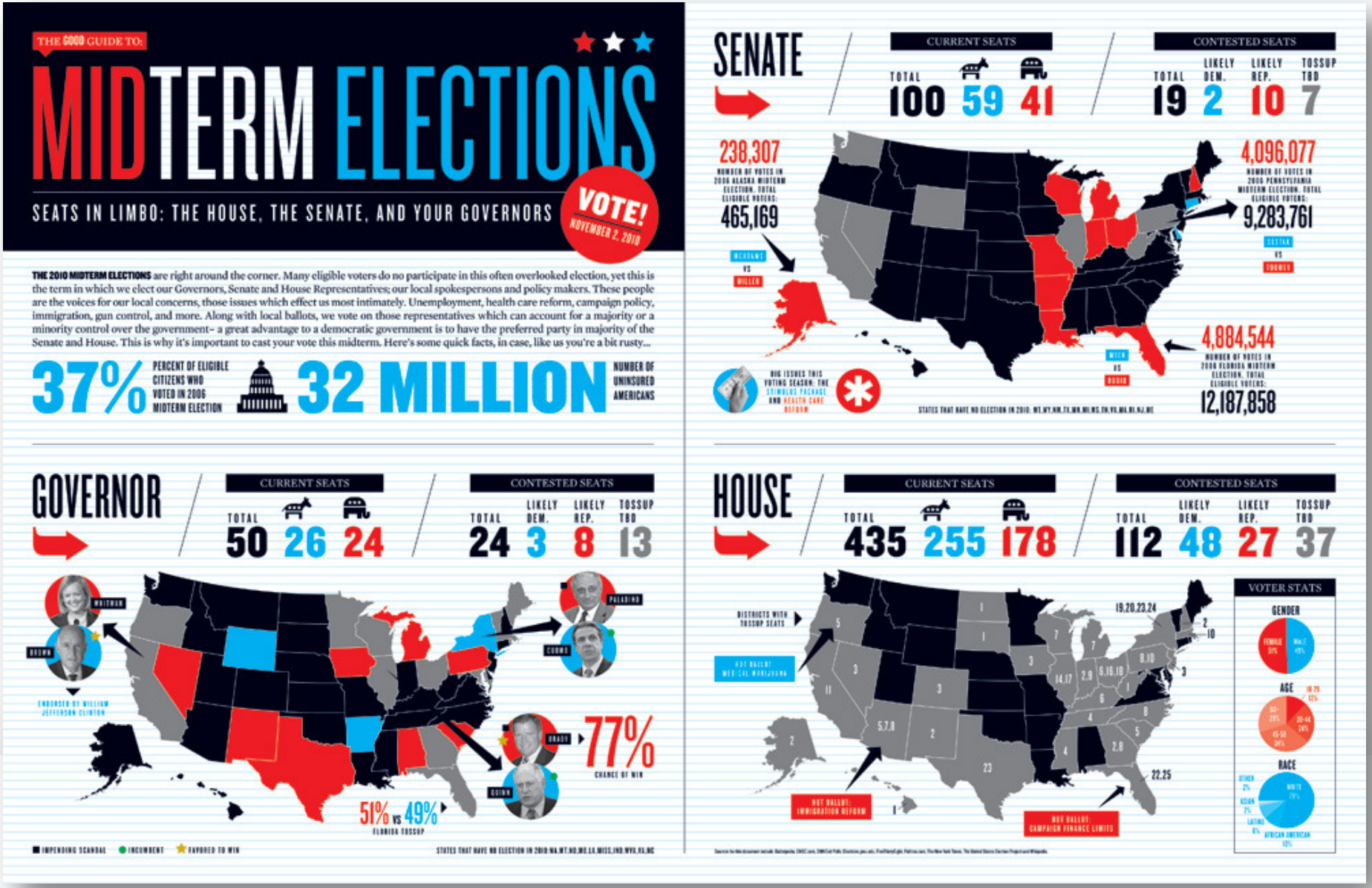
Leading: The space between letters.

200 pt leading

ABC

-10 pt leading

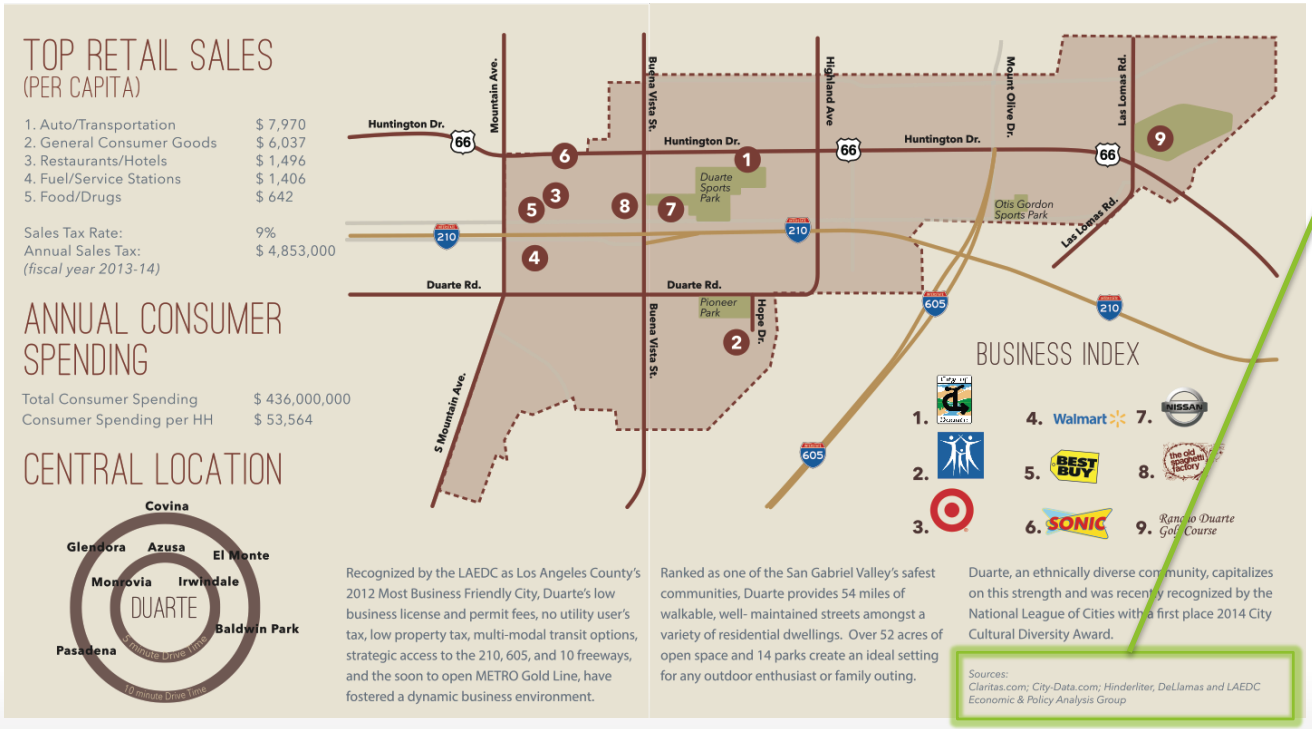
Hierarchy


THE GOOD GUIDE TO:
MIDTERM ELECTIONS
SEATS IN LIMBO: THE HOUSE, THE SENATE, AND YOUR GOVERNORS
VOTE! NOVEMBER 2, 2010
THE 2010 MIDTERM ELECTIONS are right around the corner. Many eligible voters do no participate in this often overlooked election, yet this is the term in which we elect our Governors, Senate and House Representatives; our local spokespersons and policy makers. These people are the voices for our local concerns, those issues which effect us most intimately. Unemployment, health care reform, campaign policy, immigration, gun control, and more. Along with local ballots, we vote on those representatives which can account for a majority or a minority control over the government– a great advantage to a democratic government is to have the preferred party in majority of the Senate and House. This is why it's important to cast your vote this midterm. Here's some quick facts, in case, like us you're a bit rusty...
37% PERCENT OF ELIGIBLE CITIZENS WHO VOTED IN 2006 MIDTERM ELECTION
32 MILLION NUMBER OF UNINSURED AMERICANS
SENATE
CURRENT SEATS
TOTAL 100 59 41
CONTESTED SEATS
TOTAL 19 LIKELY DEM. 2 LIKELY REP. 10 TOSSUP TBD 7
238,307
NUMBER OF VOTES IN 2006 ALASKA MIDTERM ELECTION. TOTAL ELIGIBLE VOTERS:
465,169
MEDDAME VS MILLER
4,096,077
NUMBER OF VOTES IN 2006 PENNSYLVANIA MIDTERM ELECTION. TOTAL ELIGIBLE VOTERS:
9,283,761
SESTAK VS TOOMEY
4,884,544
NUMBER OF VOTES IN 2006 FLORIDA MIDTERM ELECTION. TOTAL ELIGIBLE VOTERS:
12,187,858
WEIN VS RUBIO
BIG ISSUES THIS VOTING SEASON: THE STIMULUS PACKAGE AND HEALTH CARE REFORM
STATES THAT HAVE NO ELECTION IN 2010: MT,WY,NM,TX,MN,MI,MS,TN,VA,MA,RI,NJ,ME
GOVERNOR
CURRENT SEATS
TOTAL 50 26 24
CONTESTED SEATS
TOTAL 24 LIKELY DEM. 3 LIKELY REP. 8 TOSSUP TBD 13
WHITMAN
BROWN
ENDORSED BY WILLIAM JEFFERSON CLINTON
PALADINO
CUOMO
BRADY
QUINN
77% CHANCE OF WIN
51% VS 49% FLORIDA TOSSUP
IMPENDING SCANDAL
INCUMBENT
FAVORED TO WIN
STATES THAT HAVE NO ELECTION IN 2010:NA,MT,ND,MO,LA,MISS,IND,WVA,RA,NC
HOUSE
CURRENT SEATS
TOTAL 435 255 178
CONTESTED SEATS
TOTAL 112 LIKELY DEM. 48 LIKELY REP. 27 TOSSUP TBD 37
DISTRICTS WITH TOSSUP SEATS
HOT BALLOT: MEDICAL MARIJUANA
HOT BALLOT: IMMIGRATION REFORM
HOT BALLOT: CAMPAIGN FINANCE LIMITS
VOTER STATS
GENDER
AGE
RACE

Accuracy

Reveal your sources
(tiny print, footnotes etc)

Sources:
Claritas.com; City-Data.com; Hinderliter, DeLlamas and LAEDC Economic & Policy Analysis Group



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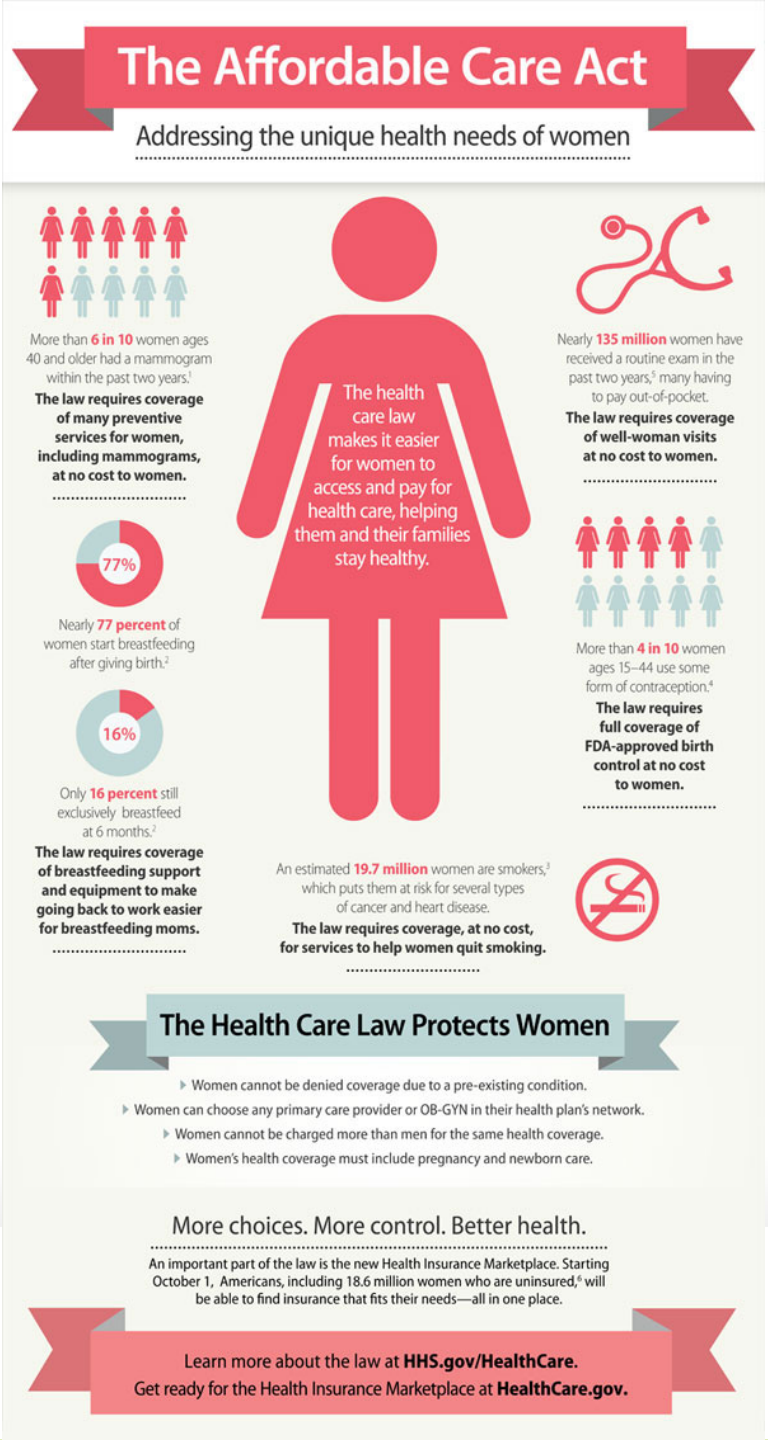
Relevance

Don’t add a cool graphic if you don’t need it to tell your story.

Ask someone else to view your infographic. If you have to explain something to them then the infographic isn’t doing the job you want it to.

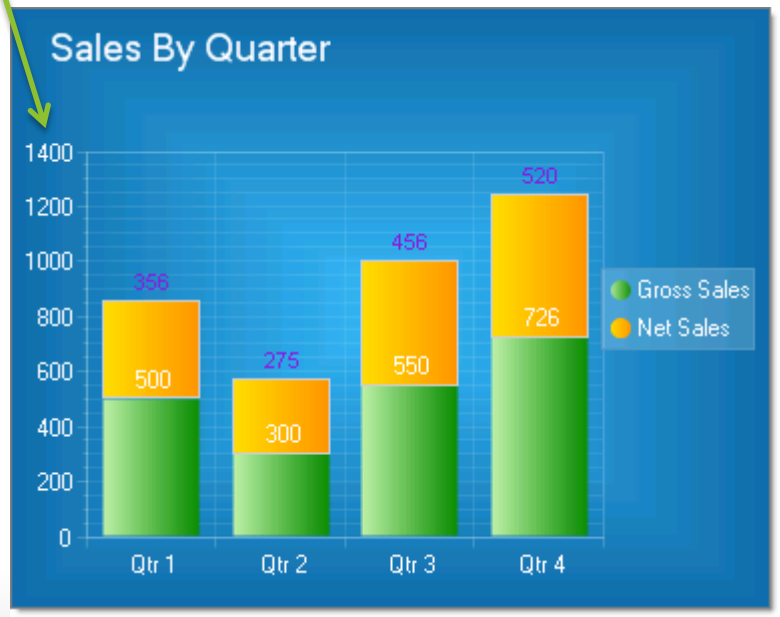


TRIPEPI SMITH

Truth

Use the same scale if you are using more than one chart

Note the difference in scale. Not an accurate depiction when comparing these two charts.

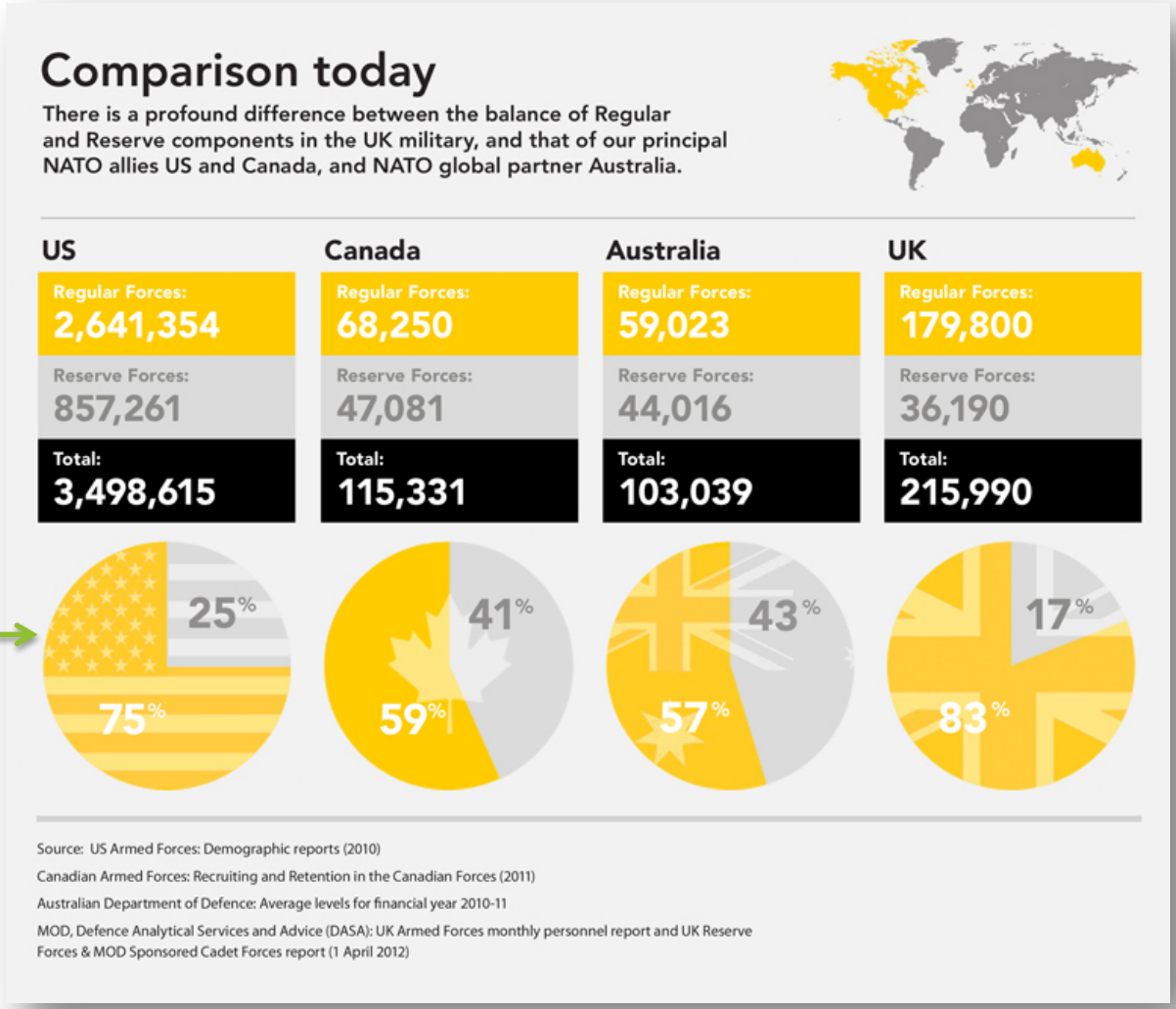


TRIPEPI SMITH

Truth

Use the same scale if you are using more than one chart

Each Pie chart is the same size and is measured in the same units.



TRIPEPI SMITH

Infographic Resources

Building Charts/Graphics:

- Piktochart
- Tugxedo
- Tagul
- Google My Maps
- Kuler (Adobe)

Data:

- Data.gov
- Opengov.com
- City Vendors
- ESRI
- Census.gov
- Comcate
- SM Platforms

Workshop

Break Into Group of 4-5 People

Think About a Story Your City Can Tell with Data

- Data Source(s)?
- Best Graphic/Display Type?
- Possible Visual Elements?
- Anticipated Storyline?
- Message Public Should Conclude from Infographic?

One Person Reports Back to Total Group