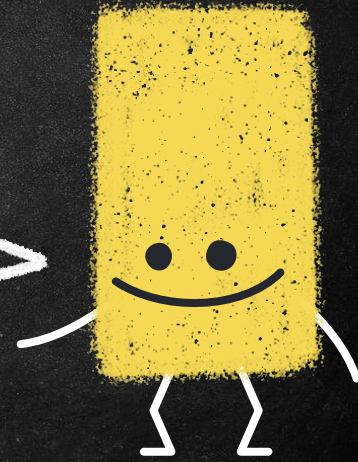
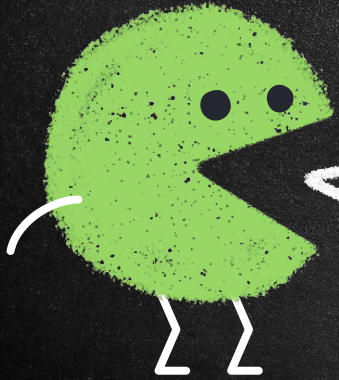


CITY OF CHULA VISTA -
SUPPORT
IMPLEMENTATION OF
OPEN DATA PROGRAM &
GOVERNANCE STANDARD

TEAM RANDOM VARIABLE



Overarching Goal: Help the City of Chula Vista's [Data Governance Team](#) carry out the [Open Data Program](#).



Data Governance Standards

August 2020

Overarching Goal: Help the City of Chula Vista's Data Governance Team carry out the Open Data Program.

Specific Project Goal: Publish user-friendly dashboards for the building permit data provided by Chula Vista's Development Services Department (DSD).



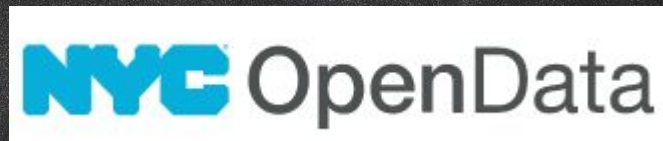
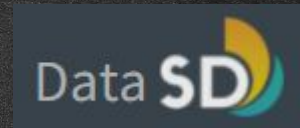
Preparation

- Data sensitivity and risks



Preparation

- Data sensitivity and risks
- Best practices from other cities



Preparation

- Data sensitivity and risks
- Best practices from other cities

Average Plan Review Times

We accept emailed or online submittals for all categories listed below. [View electronic instructions here.](#)

30-Day Average:

The review times listed in the table below apply to the initial submittal only. They do not reflect resubmittals.

Plan Type	Target Initial Review Times	Current Initial Review Times (based on recent averages)
Major residential projects <i>Ex: new homes, additions 400 square feet or larger, landmark projects</i>	4 weeks	4.5 weeks
Intermediate residential projects <i>Ex: type approved submittals, additions of 400 square feet or smaller</i>	2 weeks	2 weeks
Walk-through residential projects <i>Ex: fences, interior renovations, egress windows, patios, decks, car ports, sheds, zoning-only review of solar systems</i>	2 days	5 days
Major commercial projects	4 weeks	5 weeks



Preparation

- Data sensitivity and risks
- Best practices from other cities
- Graphing with Power BI



Obstacles and Challenges

Challenge #1 - User Research

-- *what are people interested in knowing?*

Identify user questions using keyword

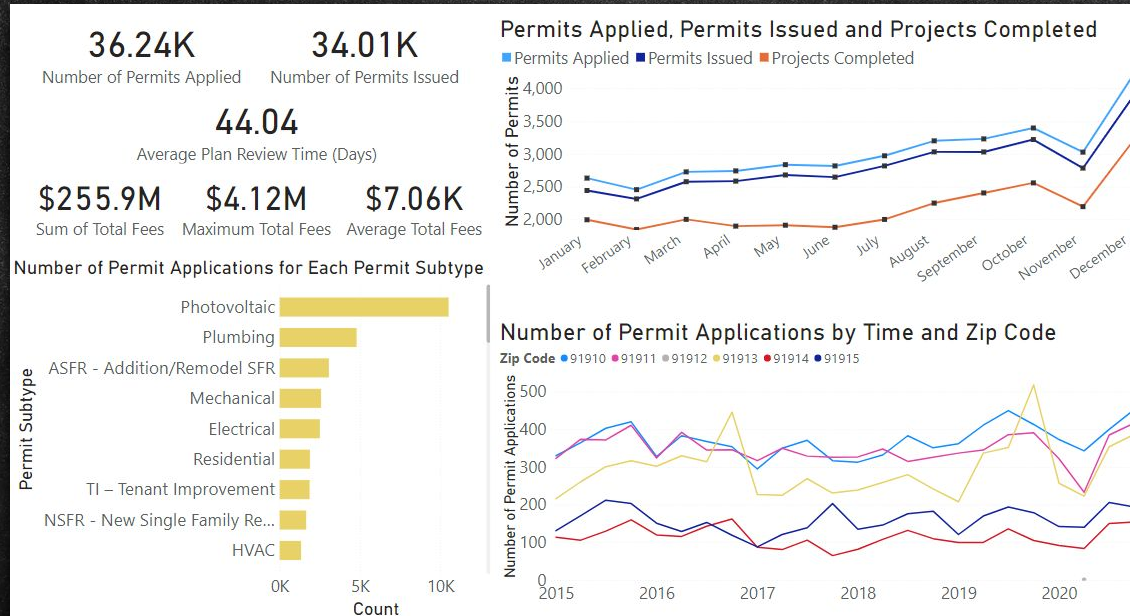
“permit data analysis”

Challenge #1 - User Research

Permit Application Questions	Data Fields
Expected (interquartile range?) plan review time in days for each type/ subtype of permit	RECORD TYPE, Sub Type, Date Applied, Date Approved
Estimated cost of different types of permit?	RECORD TYPE, Sub Type, JOB VALUE
Business/ Land Developer Questions	Data Fields
What are the most popular service providers for each permit subtype?	RECORD TYPE/ Sub Type Lic Prof
What are the most popular service providers for each zip code?	Lic Prof ADDR FULL LINE
What are the most popular permit types for each zip code?	RECORD TYPE/ Sub Type ADDR FULL LINE
Which service providers had been around for a long time? Which service providers are new? (for a specific <u>Sub Type</u>)	RECORD TYPE/ Sub Type Date Applied Date Issued Lic Prof

Challenge #2 - Cleaning the Dataset

- remove duplicate or unnecessary rows
- add useful columns
- standardize value names

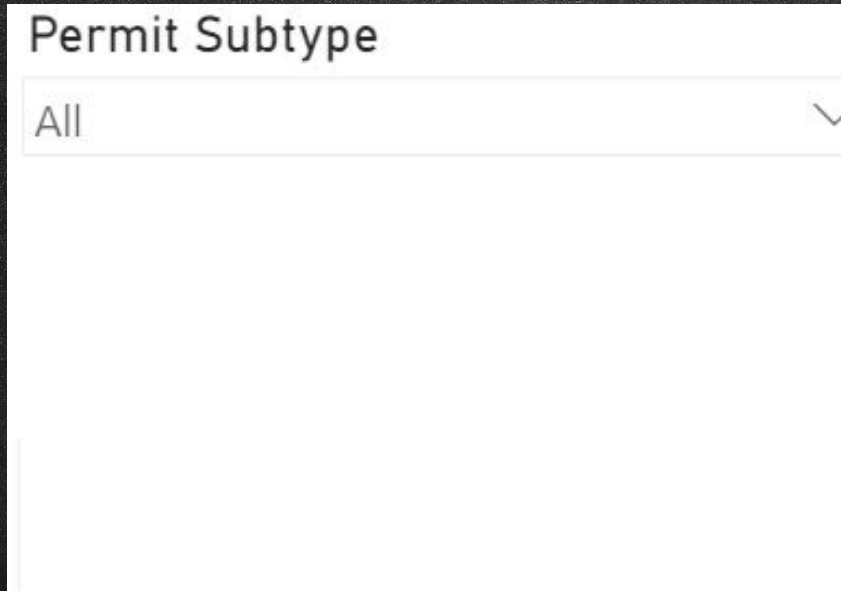


Challenge #3 - Formatting the Dashboards

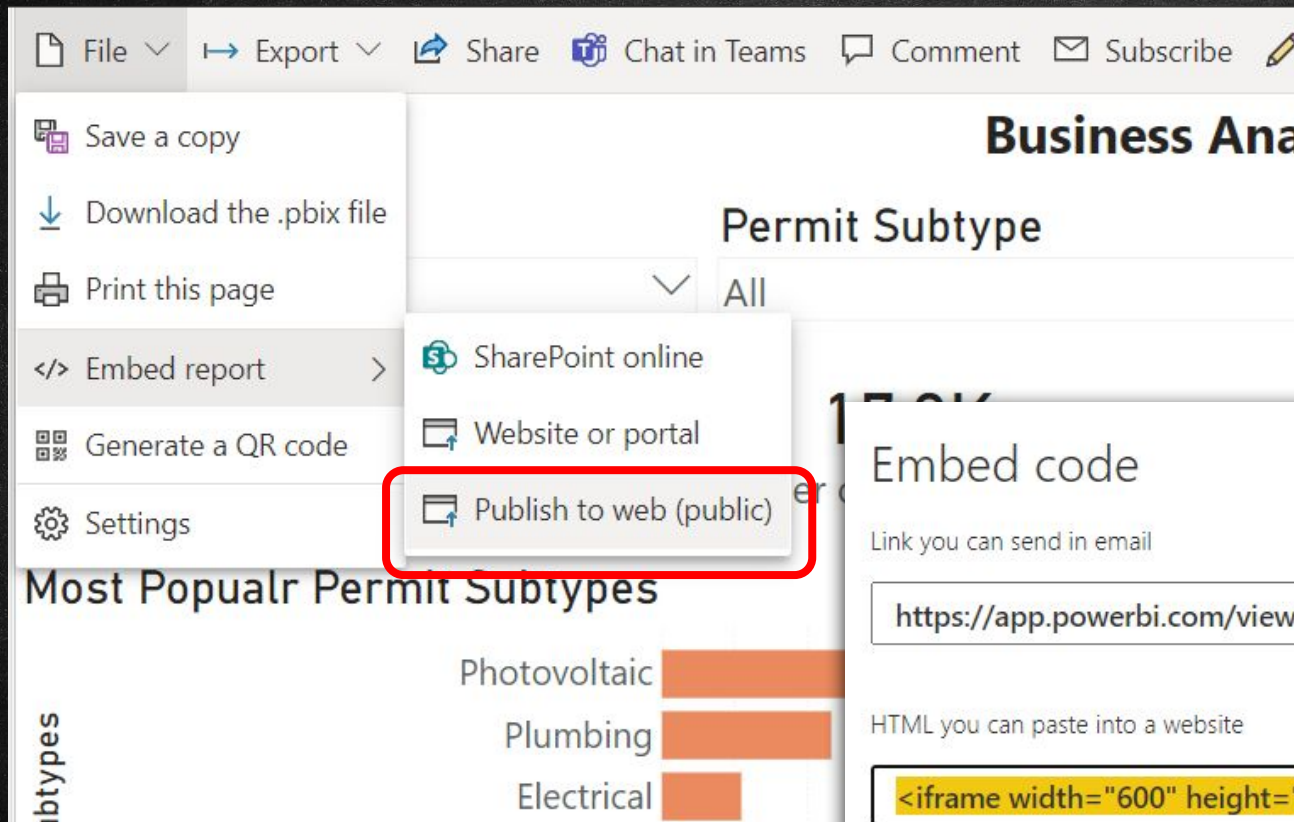
- 5 Dashboards
 - Estimated Review Time
 - New Residential Construction
 - Commercial Construction
 - Other Permit Types
 - Business Analysis

Challenge #3 - Formatting the Dashboards

- Make the dashboards **interactive**
 - Using “Slicers” (filters)



Challenge #4 - Publishing the Dashboards



The screenshot shows the Power BI Desktop interface. The top navigation bar includes 'File', 'Export', 'Share', 'Chat in Teams', 'Comment', and 'Subscribe'. The 'File' menu is open, showing options like 'Save a copy', 'Download the .pbix file', 'Print this page', 'Embed report', 'Generate a QR code', and 'Settings'. The 'Embed report' option is selected, and its sub-menu is open, showing 'SharePoint online', 'Website or portal', and 'Publish to web (public)'. The 'Publish to web (public)' option is highlighted with a red rectangle. The background shows a report titled 'Business Ana...' with a 'Permit Subtype' chart. The chart is a horizontal bar chart showing the 'Most Popular Permit Subtypes'.

Permit Subtype	Count
Photovoltaic	15
Plumbing	10
Electrical	5

Embed code

Link you can send in email

<https://app.powerbi.com/view?r=eyJrIjoiY2MxYTYz> **Copy**

HTML you can paste into a website

```
<iframe width="600" height="373.5" src="https://app.powerbi.com/view?r=eyJrIjoiY2MxYTYz" ></iframe>
```

Copy

The Dashboards (Link)

The screenshot shows the top portion of the City of Chula Vista website. On the left is the city logo with the text "CITY OF CHULA VISTA". To the right is a navigation bar with links for "Residents", "Visitors", "Businesses", "Services", "Departments", and "I Want to...". Further right are social media icons for Facebook, Twitter, and Instagram. Below the navigation bar is a search bar with the text "Search...".

The screenshot displays the "Business Analysis" dashboard. At the top, there are four filter dropdown menus: "Permit Type" (set to All), "Zip Code" (set to All), "Permit Subtype" (set to All), and "Year Permit was Issued" (set to All). Below the filters are four large data points: "17.2K Number of Permits Applied", "17.2K Number of Permits Issued", "\$1.3bn Sum of Project Value", and "\$151.0M Sum of Total Fees".

There are two horizontal bar charts below the metrics:

- Most Popular Permit Subtypes:** A chart showing the count of permits for various subtypes. Photovoltaic is the most popular, followed by Plumbing, Electrical, Mechanical, Residential, NSFR - New Single Family Resi..., HVAC, TI - Tenant Improvement, ASFR - Addition/Remodel SFR, and Commercial.
- Most Popular Service Providers:** A chart showing the count of permits for various service providers. VIVINT SOLAR DEVELOPER LLC is the most popular, followed by SUNRUN INSTALLATION SERVICE..., SEMPER SOLARIS CONSTRUCTIO..., A S I HASTINGS INC, M N MAUZY MECHANICAL INC, CALIFORNIA DELTA MECHANICA..., TESLA ENERGY OPERATIONS INC, AFFORDABLE WATER HEATERS A..., PACIFIC COAST COMMUNITIES I..., and SUNPOWER CORPORATION SYST...

Estimated Review Time

Permit Subtype

All

Review Type

- Building Review
 Engineering Review
 Fire Review
 Planning Review

Year

- 2018
 2019
 2020

1.6

Average Review Time (Weeks)

New Residential Construction

Permit Subtype

All

Zip Code

All

Year Permit was Issued

All

4,593

Number of Units Issued

49

Average Project Timeframe (Issued to Closed, in Weeks)

\$40.55K

Average Fee per Unit

Permit Type	Number of Units Issued	Average Project Timeframe (Issued to Closed, in Weeks)	Average Fee per Unit
New Residential Construction	4,593	49	\$40,546.54
Total	4,593	49	\$40,546.54

Permit Subtype	Number of Units Issued	Average Project Timeframe (Issued to Closed, in Weeks)	Average Fee per Unit
Private Site Improvements	0	57	
NASD - New Accessory 2nd Dwelling Unit	123	36	\$7,883.94
NMFG - New Manufactured Home	2	70	\$20,809.07
NAPT - New Apartment	2,445	77	\$26,028.28
NCDO - New Condo	991	49	\$29,412.11
NDUP - New Duplex	56	42	\$40,808.70
NSFR - New Single Family Residence	885	48	\$48,126.95
NDCO - New Detached Condo	90	51	\$50,264.93
Total	4,592	49	\$40,572.05

Chula Vista - Support Implementation of Open Data Program & Governance Standard

Table of Contents

Problem Statement	2
Goals	2
Overarching Goal	2
Specific Project Goal	2
Best Practices From Other Cities	2
Accomplishments	3
Final Result: Chula Vista DSD Permit Data Dashboard Web Page	3
Link to Web Page	3
Links to Individual Dashboards	3
How to Create Interactive Dashboards	4
Part 1: Identify User Demands	4
Part 2: Data Preparation	6
Part 3: Create Interactive Dashboards	10
Part 4: Publish to Web Page	17
Other Concerns	20
How often should we update the dashboards?	20

A Wrap-Up Report

Conclusion

- Democratize information flow + increase transparency
- Help homeowners and business make informed decisions
- Benefit community and staff



Thank you for listening!

Student Team:

Ester Tsai (Team Lead) | Data Science | tsaierster@gmail.com

Ted Feng | Applied Math | zef007@ucsd.edu

Kaung Min Khant | Economics | kkhant@ucsd.edu