



# **Background - CRIM**

- Puerto Rico government agency
- Created by approval of Law 80 of August 30, 1991
- Tasked with managing property taxes
- In charge of invoicing, receiving, and distributing the funds

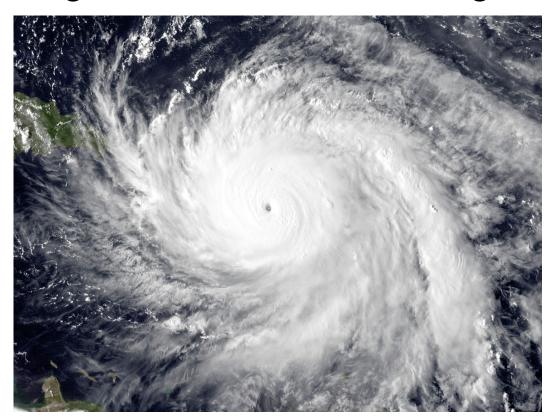






## Situation

 CRIM's management started a process to identify its needs, the needs of taxpayers, and the needs of municipalities, which were in an economic crisis due to the passing of Hurricane María through Puerto Rico







## Situation

 Due to this economic crisis, municipalities needed additional funds to satisfy the needs of its population in important areas:

Health Services



Security



Education



Employment

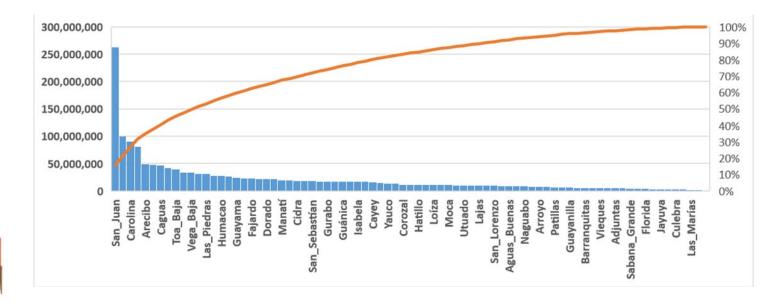






## The Problem

- CRIM needed to increase its income by at least 10%
- CRIM's Account Receivables represent a \$3.6 billion opportunity
- Income from the 4 municipalities of San Juan, Carolina, Ponce, and Bayamón represent 30% of this debt

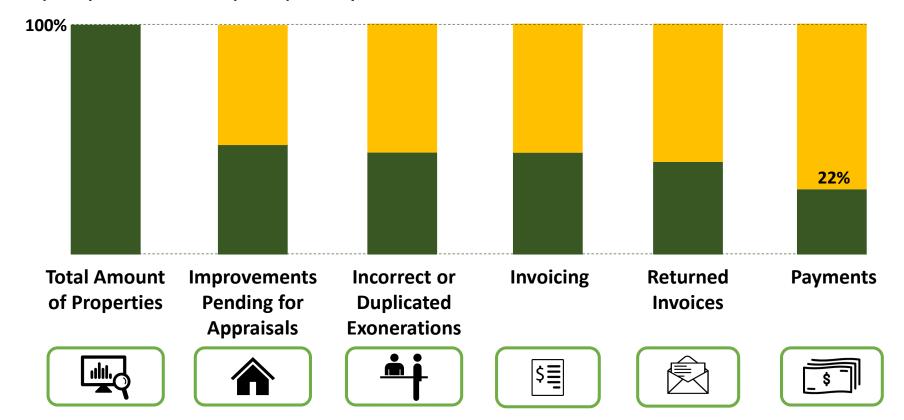






### The Problem

 Only 22% of this opportunity is received from the payment of property taxes







## **Data Silos**









- 1,179,217 Parcels
- 1,377,900 Cadasters

- 1,140,871 Parcels
- 1,273,394 Cadasters



~127K Parcels/Cadasters not identified vs 2010 Census





## **Undeliverable Invoices**

Bad Address Flag
111,517







No Address
Information
3,662



No Contact
Information
1,517





Total

116,696





## **Returned Invoices**





Returned Invoices103,790









# **Property Improvements Pending Appraisals**





PropertyImprovements54,721









# **New Pools Pending Appraisals**





New Pools27,773









## **New Properties Pending Appraisals**





Pending Appraisals58,000

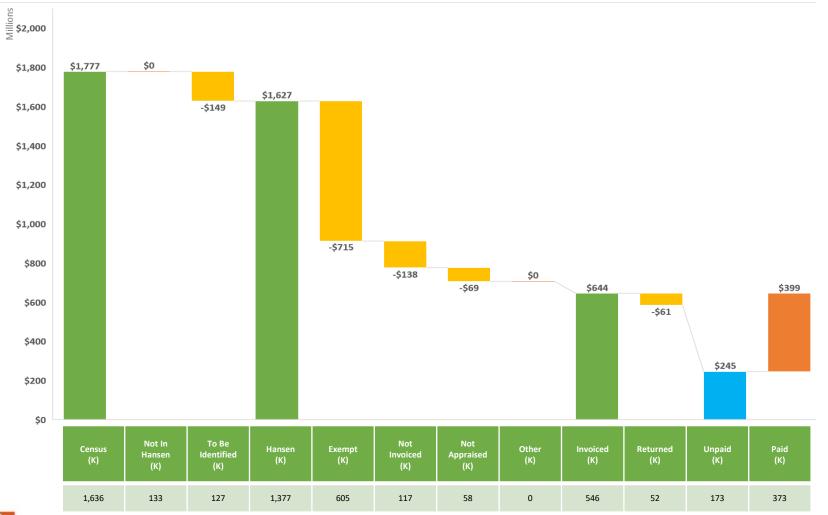








# **Summary**







## Solution - Phase 1

Data Sources

### **Data Flow**

Analysis

#### Hansen



**SATAS** 



**GIS** 

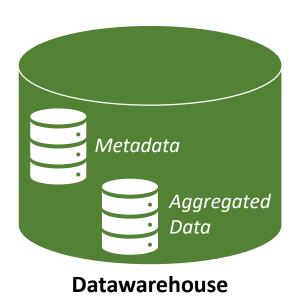


Cleanse

✓ Transform

**✓** Aggregate

**ETLs** 





Multidimensional **Analysis** 



**Data Mining** 



Visualization



**Reports** 



**Dashboards** 



**Alerts** 





## Solution – Phase 2

Integration of data from other government agencies



- ✓ Commercial Properties
- ✓ Industrial Properties
- ✓ Installations



- ✓ Commercial Properties
- ✓ Industrial Properties
- ✓ Installations



- ✓ Properties Sold
- ✓ Businesses Register











✓ Deaths



✓ Rental Properties





## Solution – Phase 3

#### Identification



Activities and tasks related to the integration and analysis of information to identify cases with income potential

### **Notification**



Activities and tasks related to notifying clients with income potential

### **Invoicing**



Activities and tasks related to invoicing clients' recognized debt

### **Customer Service**



Activities and tasks related to Customer Service

### **Payment Process**



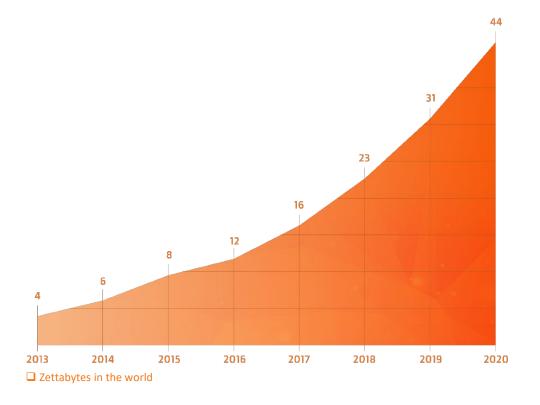
Activities and tasks related to the improvement of the payment processes





## **Amount of Data**

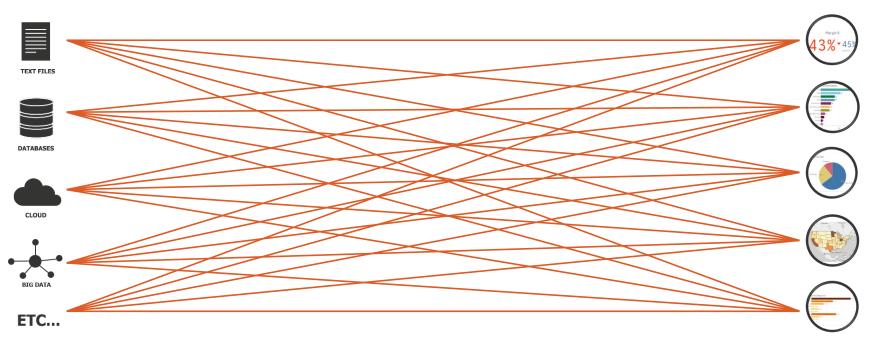
- IDC estimates the amount of data doubles every two years
- As data grows in complexity, it is more difficult to access, govern, and maintain compliance







# **Traditional Approach to BI**

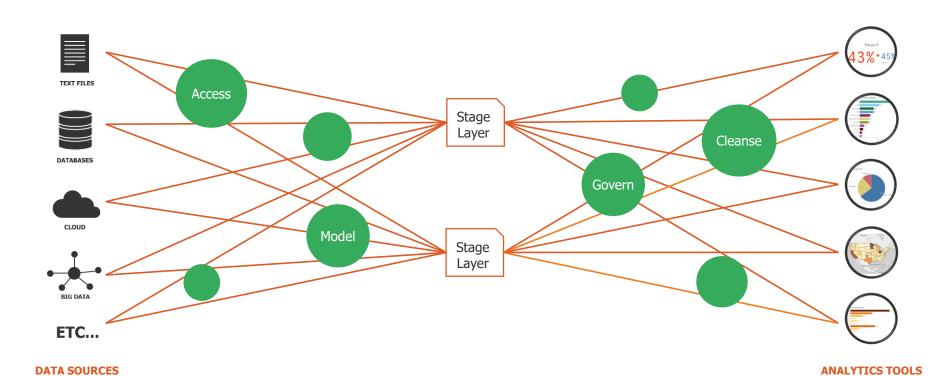


DATA SOURCES ANALYTICS TOOLS





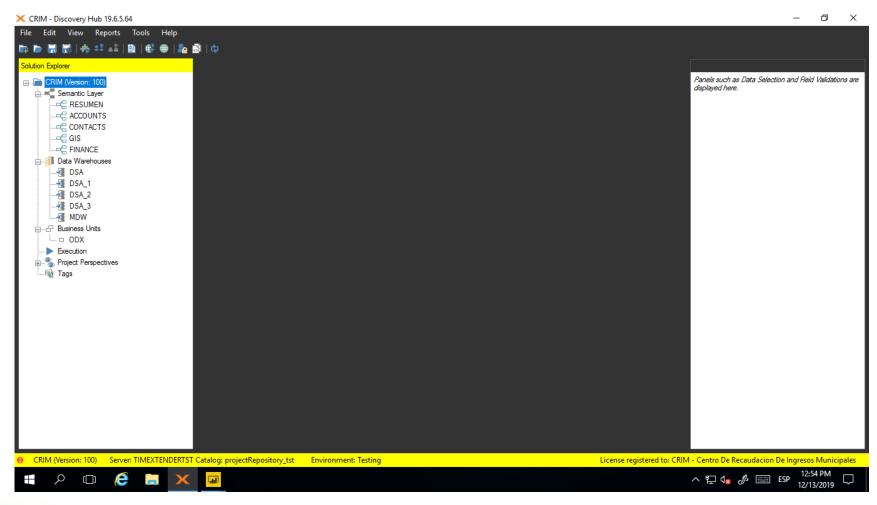
## **Patchwork of Tools**







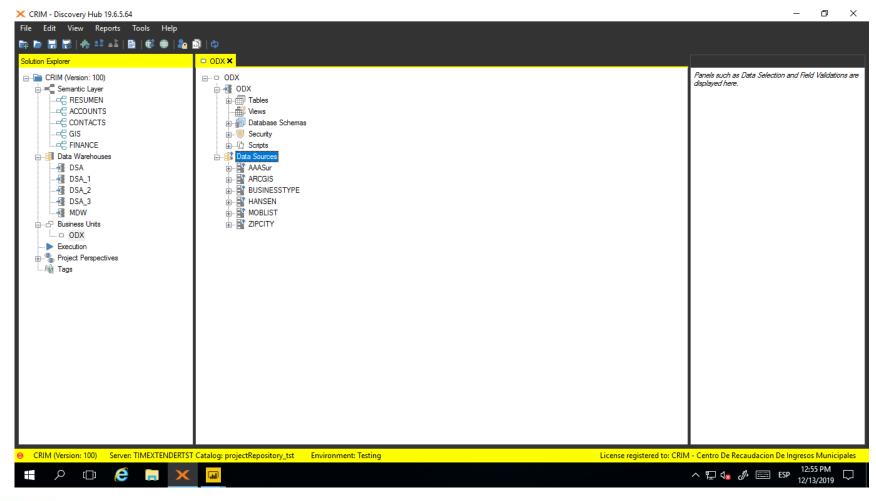
# Creation of ODX, DSAs, MDW y SMs







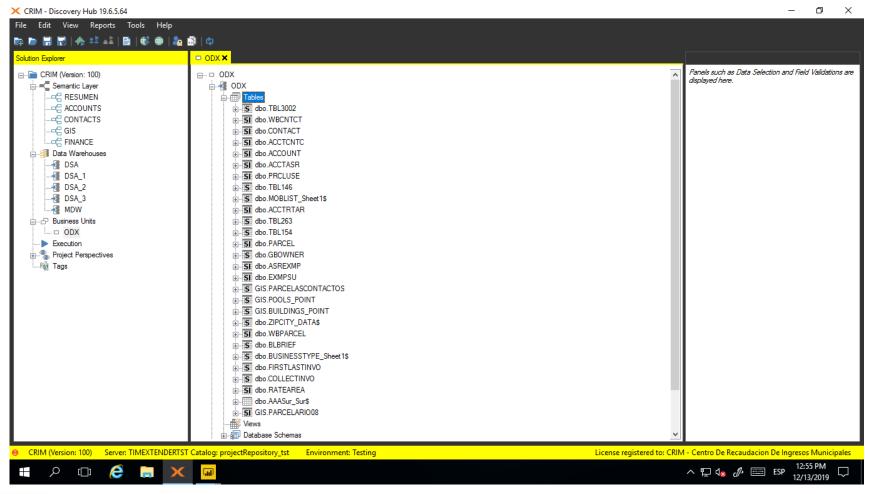
## **Creation of Data Sources**







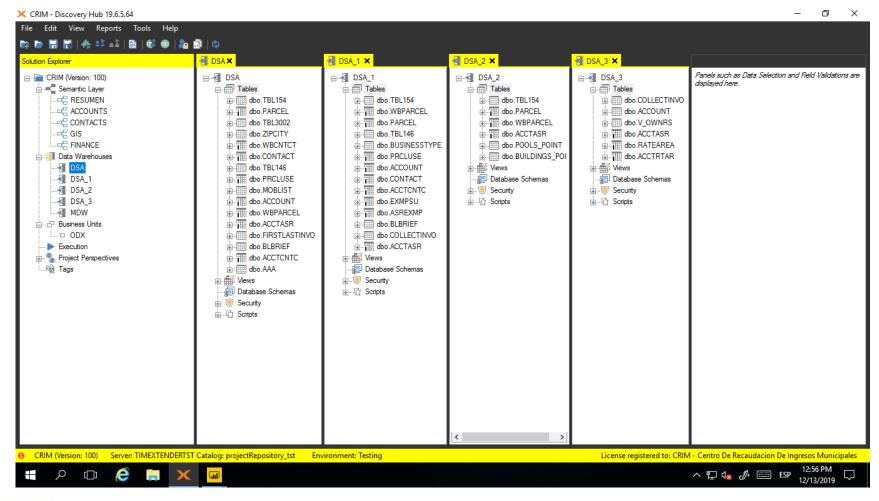
## Selection of Tables for ODX







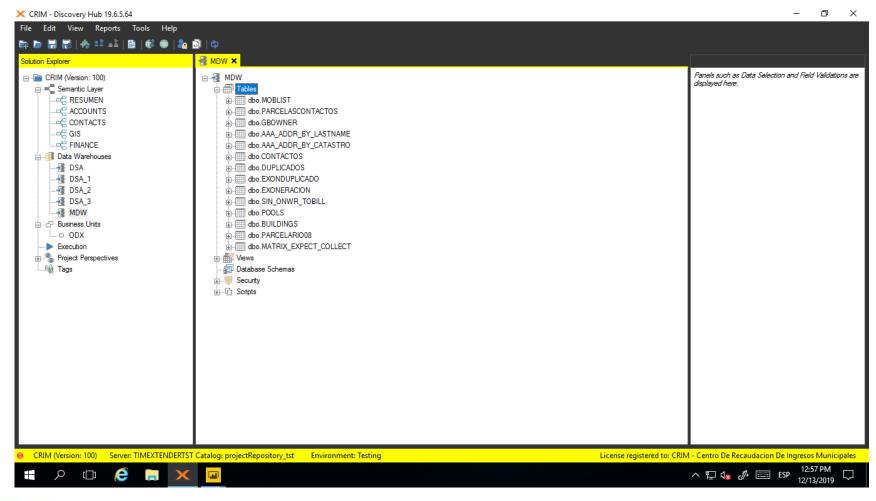
# Integration in DSAs







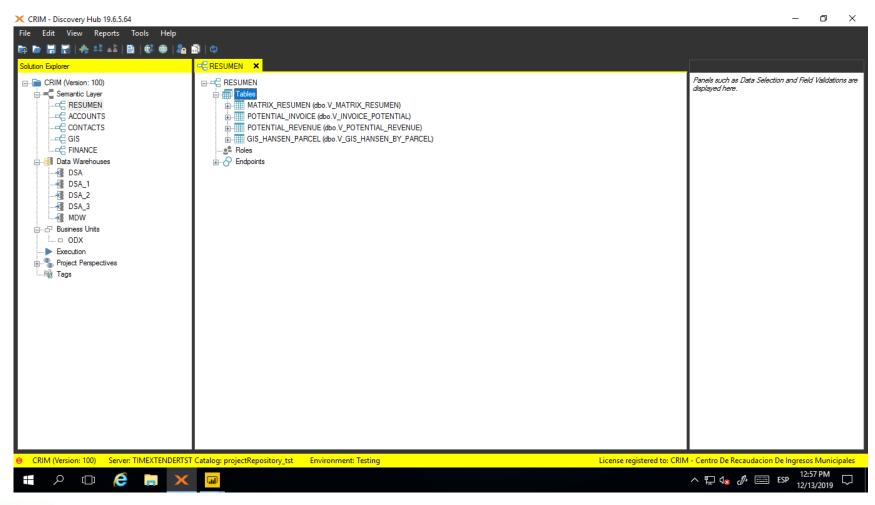
# **Aggregation in MDW**







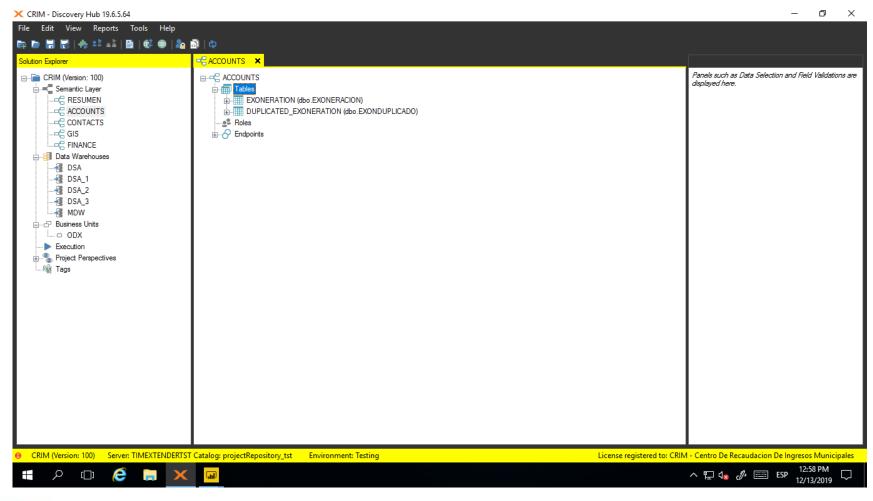
## Resumen Semantic Model







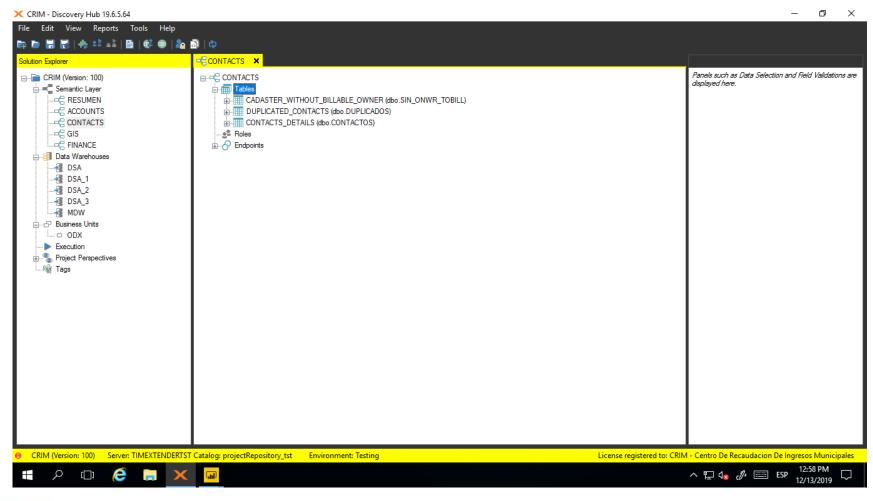
## **Accounts Semantic Model**







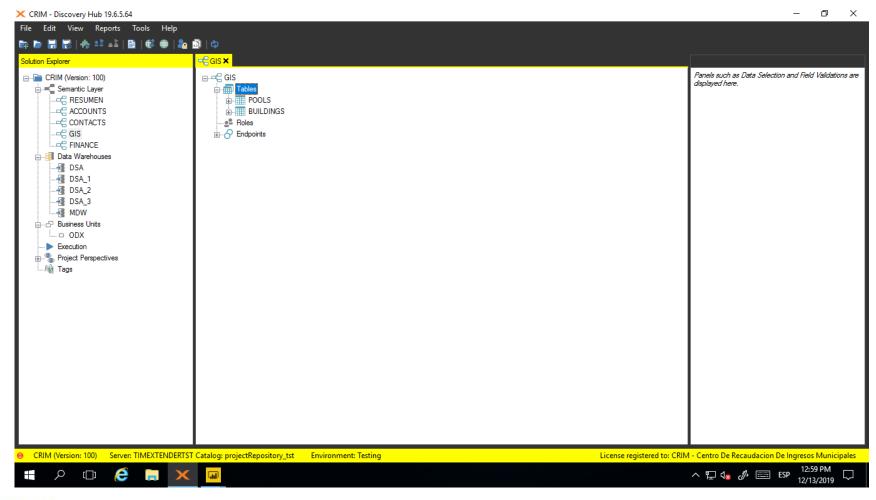
## **Contacts Semantic Model**







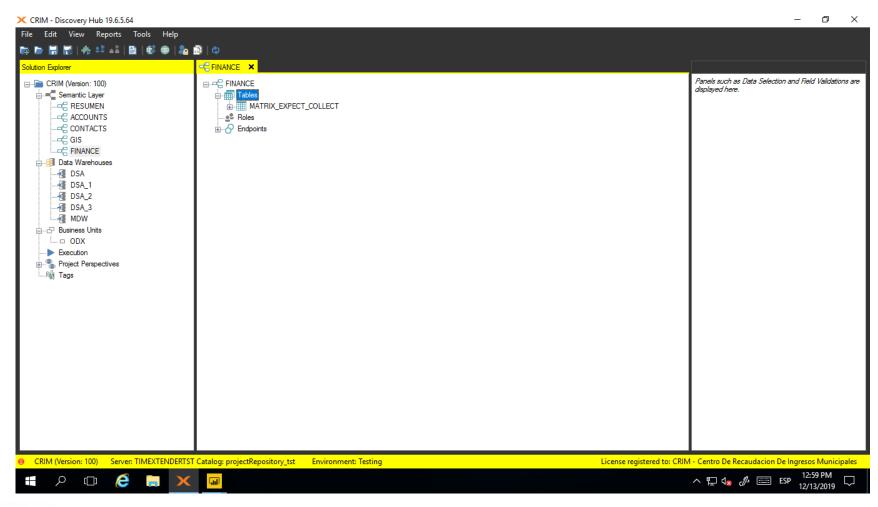
## **GIS Semantic Model**







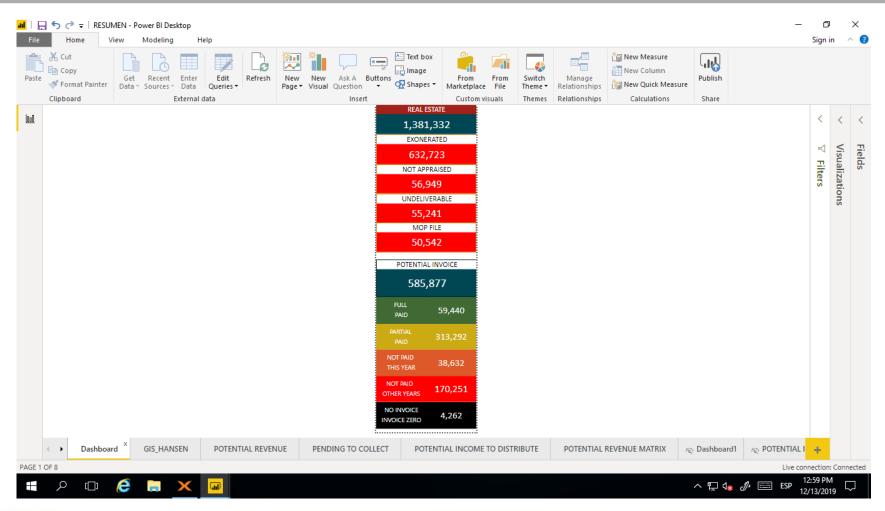
## **Finance Semantic Model**







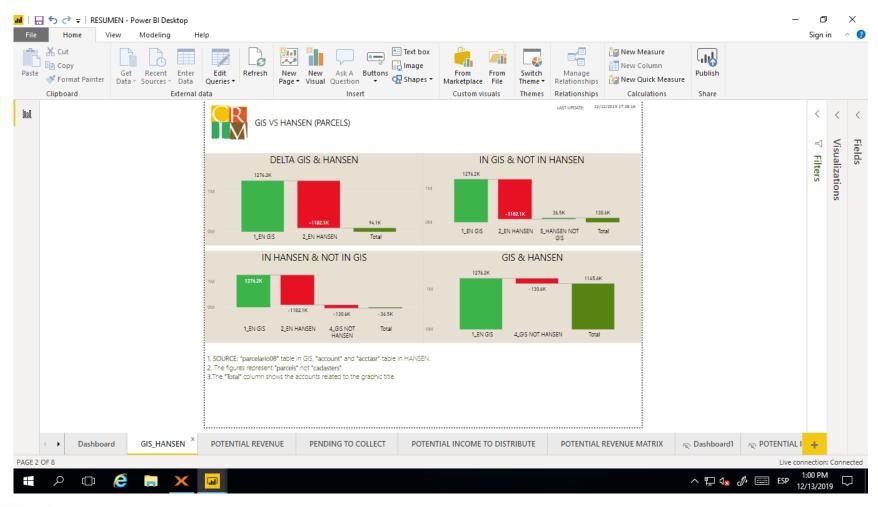
## Resumen - Dashboard







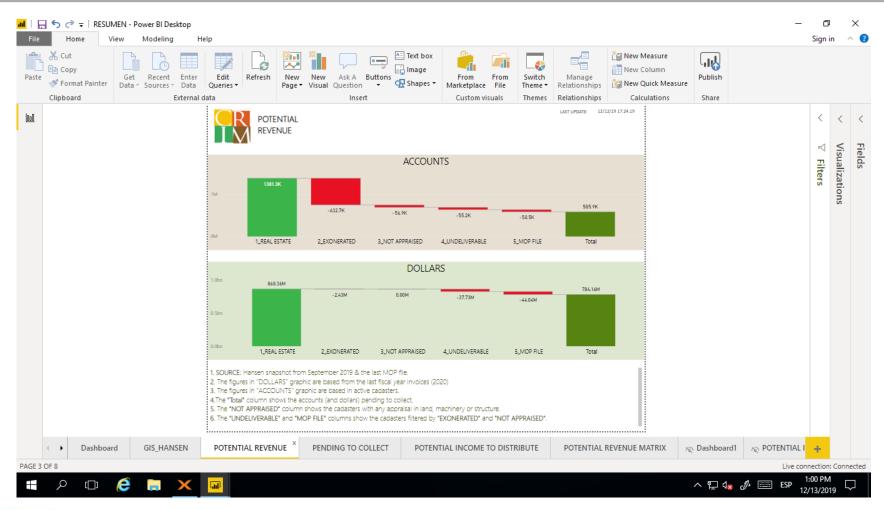
## Resumen - GIS vs Hansen







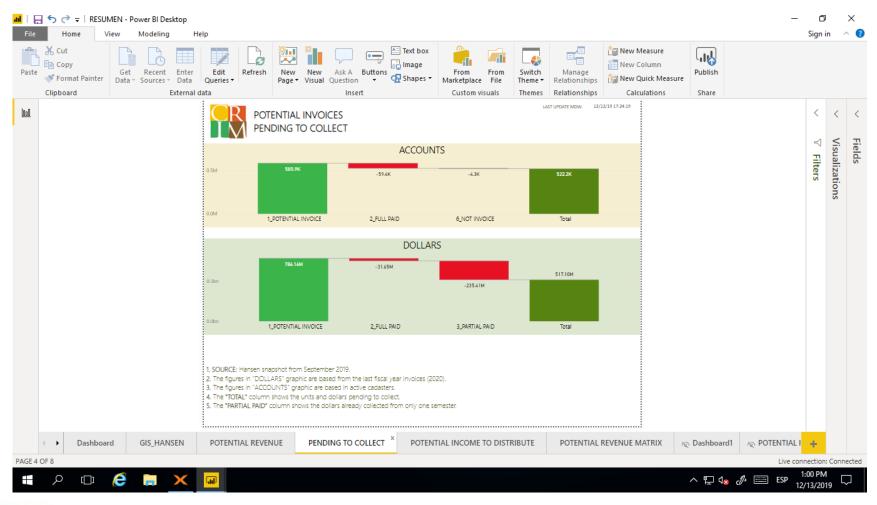
## Resumen - Potential Revenue







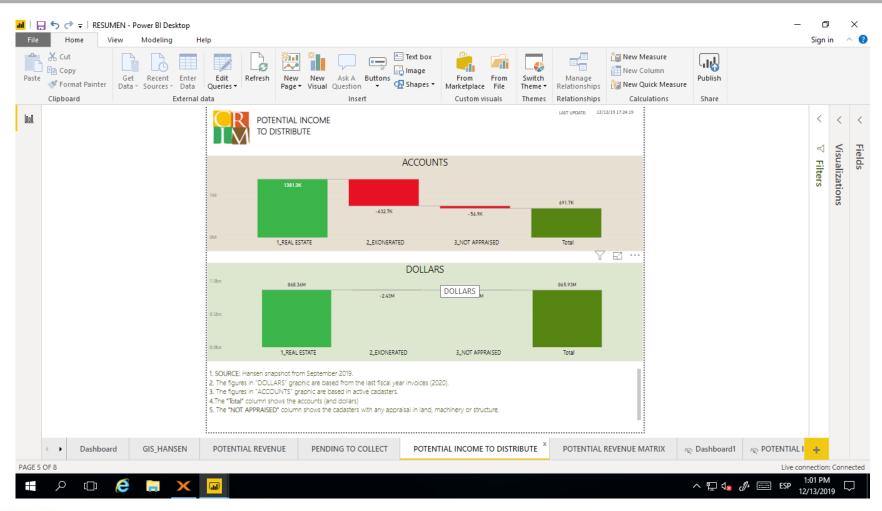
# **Resumen – Pending to Collect**







## Resumen – Potential Income to Distribute







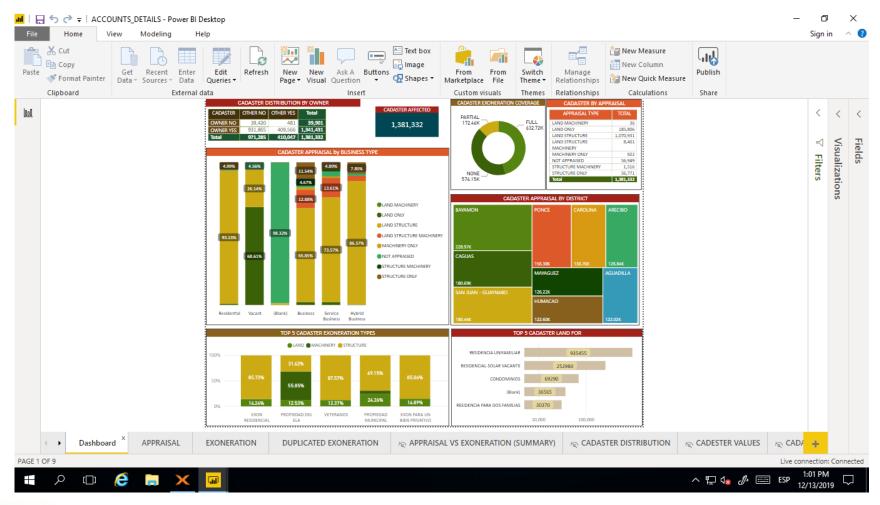
## Resumen – Potential Revenue Matrix







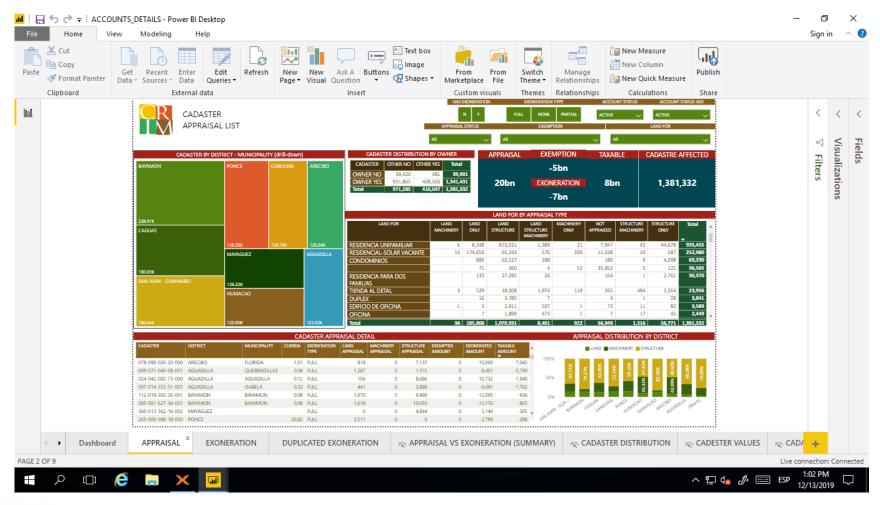
## **Accounts - Dashboard**







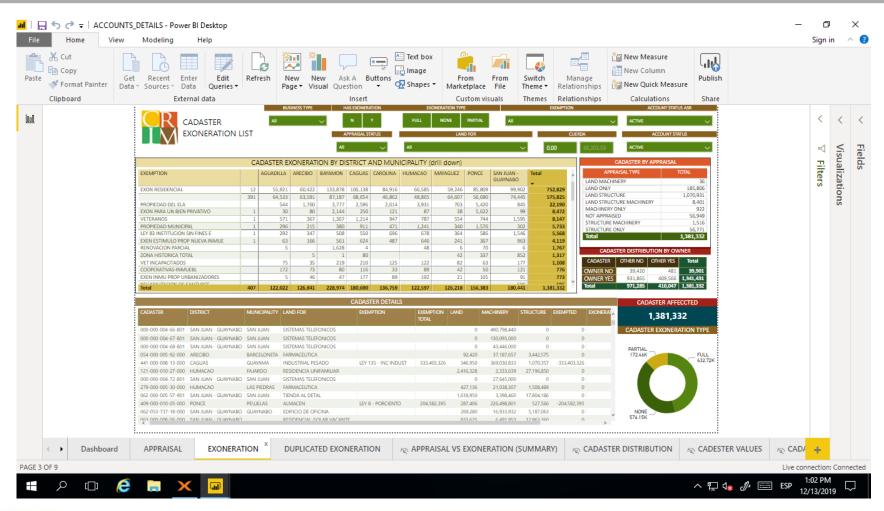
## **Accounts – Appraisals**







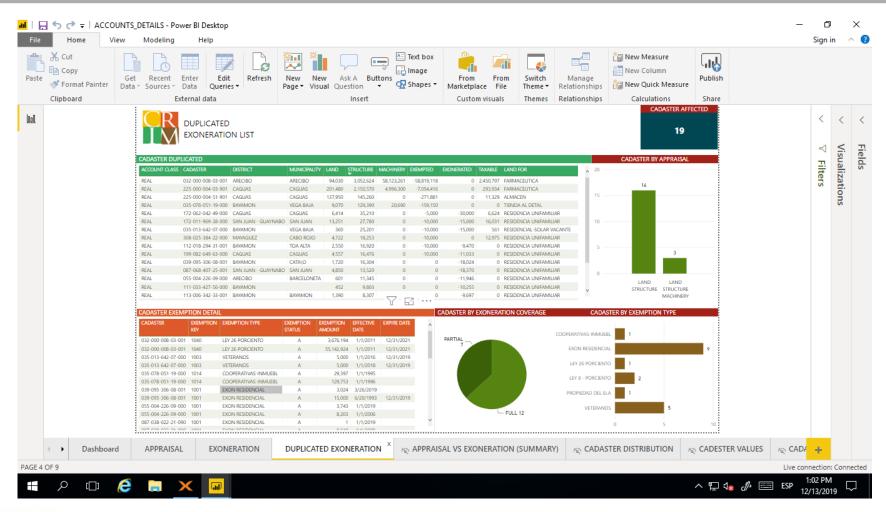
#### **Accounts – Exonerations**







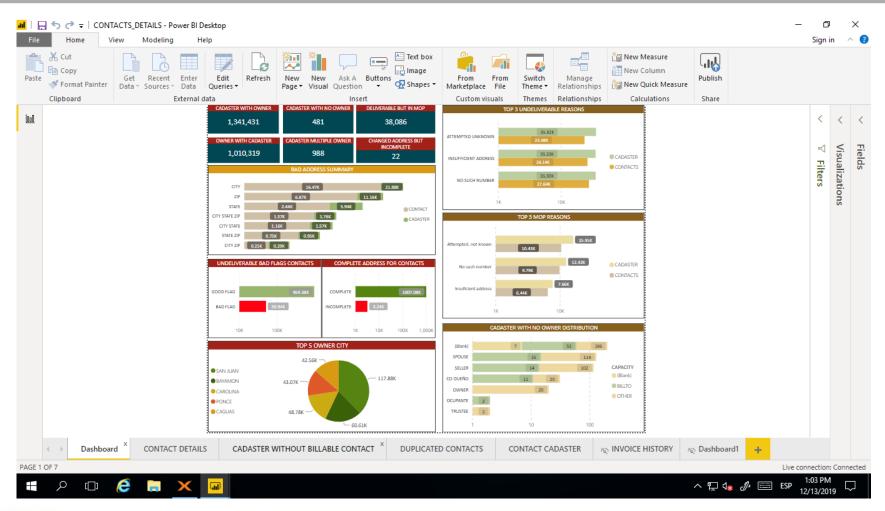
## **Accounts – Duplicate Exonerations**







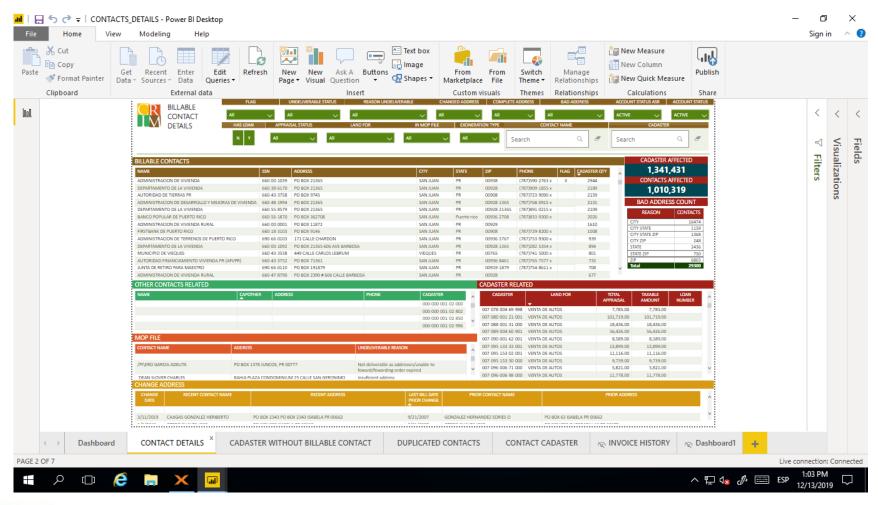
## **Contacts - Dashboard**







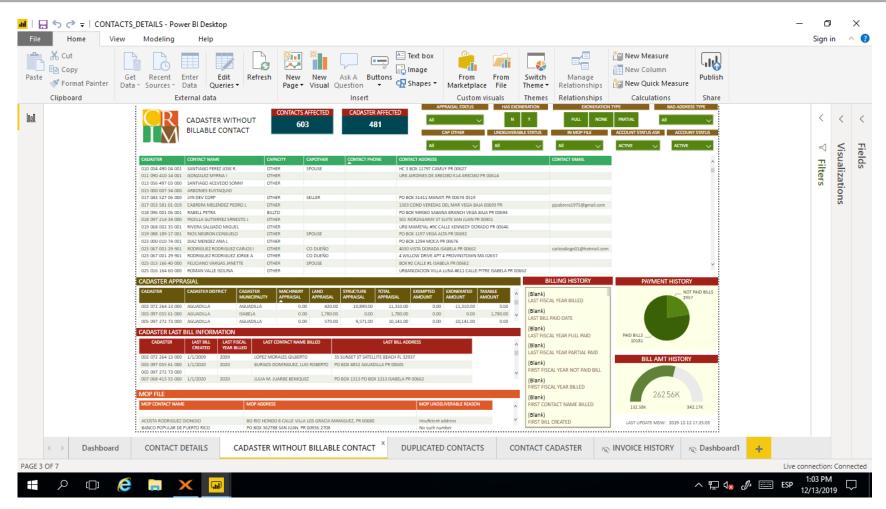
## **Contacts - Contact Details**







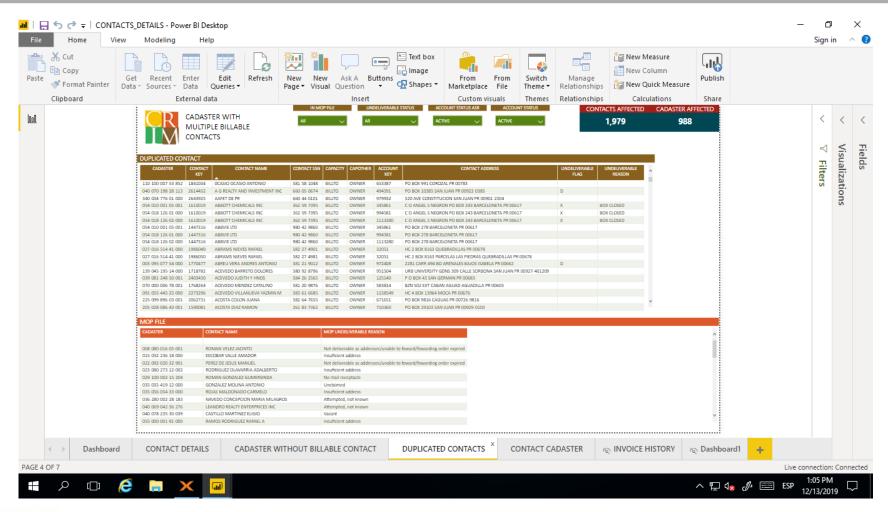
### Contacts - Cadaster without Billable Contact







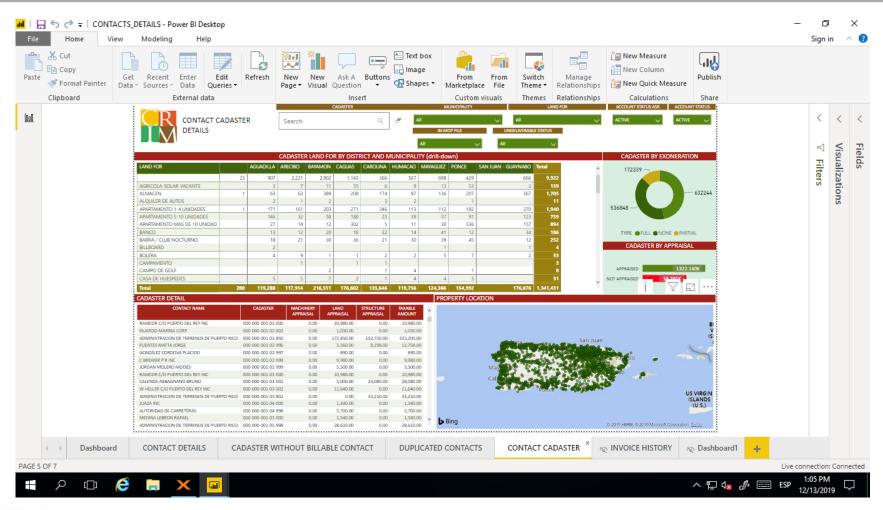
## **Contacts – Duplicate Contacts**







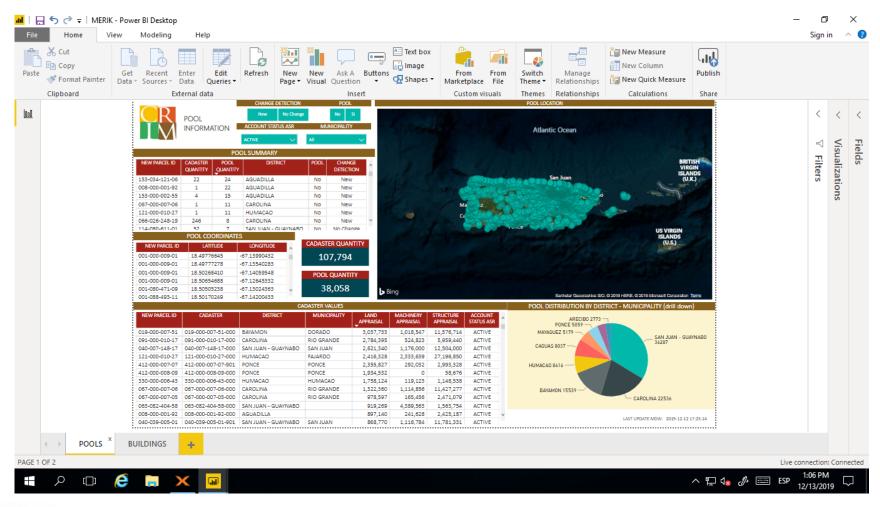
### **Contacts – Contact Cadaster Details**







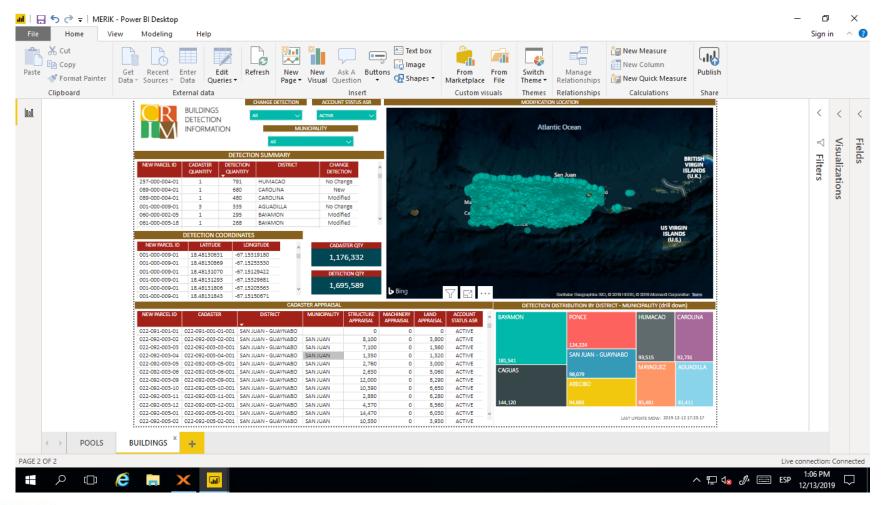
## **Merrick - Pools**







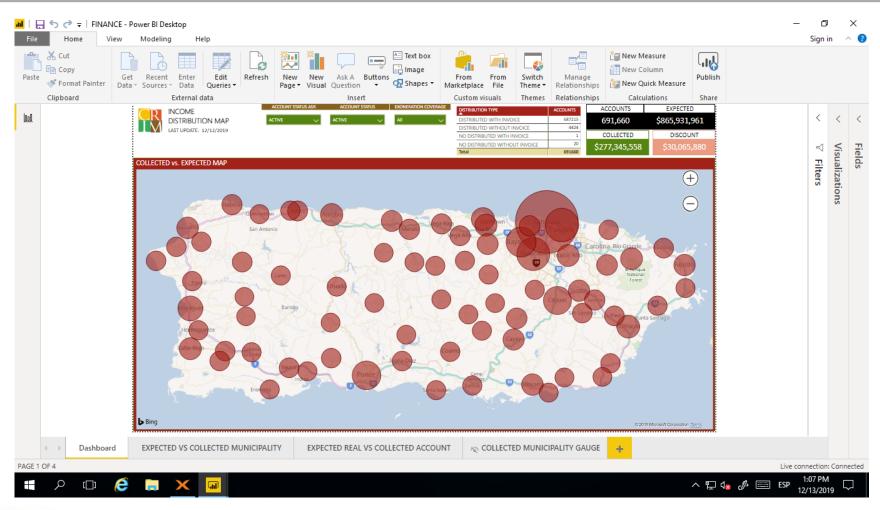
# **Merrick - Buildings**







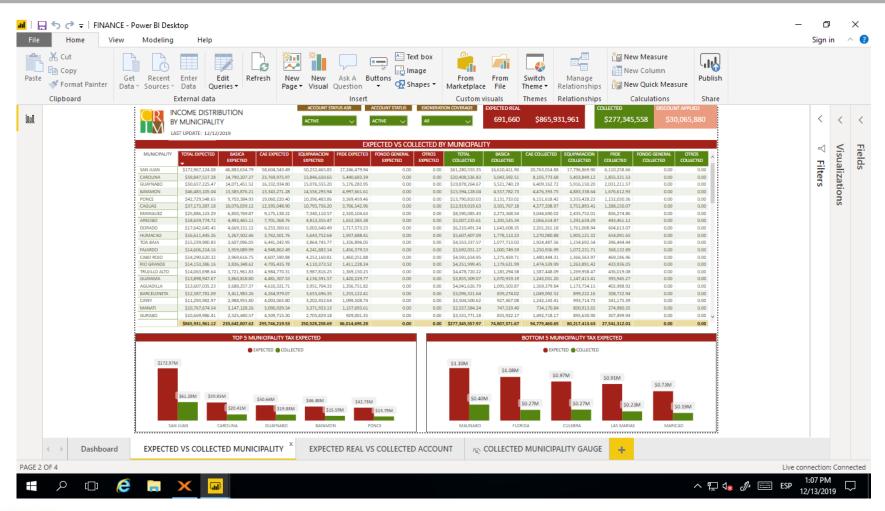
### Finance - Dashboard







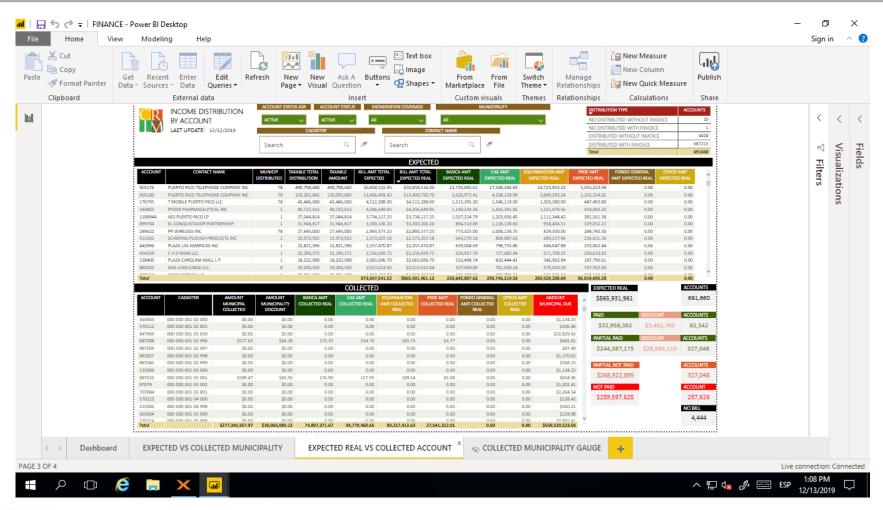
## Finance – Income Distribution by Municipality







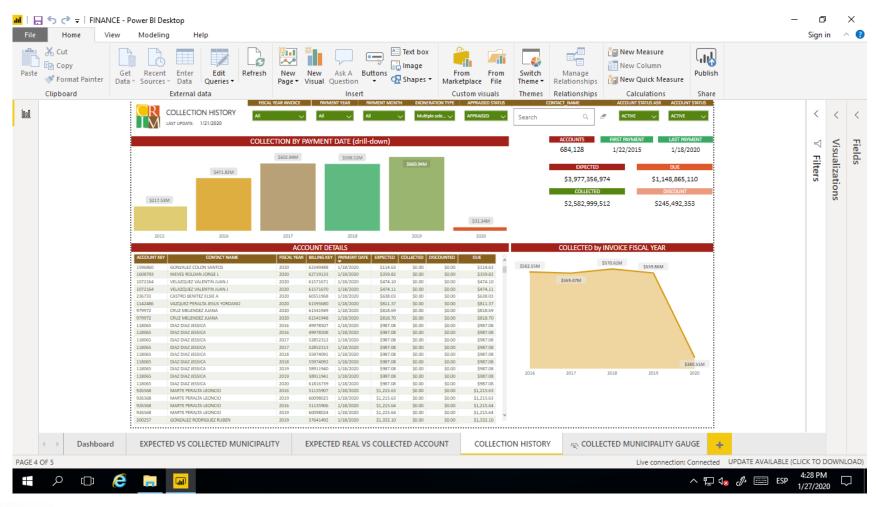
# Finance – Income Distribution by Account







## Finance – Collection History







## **Long-Term Vision**

- Government-wide Datawarehouse
- Integration of data from all government agencies
- Unique ID to identify citizens
  - Independent of Social Security number
  - Applies to all government agencies
  - Independent of citizenship status
- Unique ID to identify properties
  - Based on geo-spatial location
  - With standardized address
  - Applies to all government transactions
- Maximize income
- Minimize fraud





#### **Sunrise**



## Methodology

Revenue Assurance

#### Software

- Azure
- Power BI
- SQL Server
- Discovery Hub



#### **Clients**

 Puerto Rico Aqueducts and Sewers Authority



 Puerto Rico Electric Power Authority



Department of Health



 Corporación del Fondo del Seguro del Estado







## **Microsoft OCP Catalog**

**Partner** 

Go-To-Market Services

Training & Documents

Partner / Solutions / Solution



View Platforms View Readiness Open in CRM **View Countries** 

#### Sunrise by Truenorth

Truenorth Corporation (Puerto Rico)

Sunrise by Truenorth has one goal in mind, safeguarding your income. Such goal is achieved through the implementation of business strategies, monitoring tools, and a continuous improvement process to achieve steady billing over time. Sunrise is a cloud based solution that provides positive income streams using Truenorth's process management methodology and software tools aiming to achieve the ultimate goal: securing the client's income.

Readiness: Co-Sell Prioritized

Azure License: Bundled

SQL Average Deal Size in # of Cores: -

Countries: 2

Total 12-mo Partner Revenue (Avg Azure Deal): 40000

Incentives: -













## **Worldwide Coverage**



### Puerto Rico's property tax receipts up sharply after TimeXtender and Truenorth implement a data warehouse solution in just 15 days

Centro de Recaudación de Ingresos Municipales (CRIM) selects Discovery Hub® and Truenorth Corporation to deliver a complete data warehouse and advanced analytics platform.

#### TIME MATTERS IN GOVERNMENT

Time matters in government because citizens demand accountability. No citizen wants to see their taxes collected unevenly or spent carelessly. Puerto Rico's government has attracted media attention recently as its citizens inquired about the property tax billing and collecting systems.

#### GOVERNMENT

#### **CUSTOMER BACKGROUND**

- Puerto Rico property tax authority
- Build complete data warehouse and advanced analytics on-site





### Conclusion

