



PROJECT OVERVIEW

HM2D WILL DEVELOP THE LAND FOR THE BOBCAT RIDGE INDUSTRIAL PARK.

- LOCATED IN SAN ANTONIO, TEXAS
- SITE IS 35-ACRES
- ZONED AS I-1 LIGHT INDUSTRIAL
- 410,000 SQUARE FEET
- 410 PARKING SPACES
- 2-ACRE RETENTION POND

CONSTRAINTS & STANDARDS

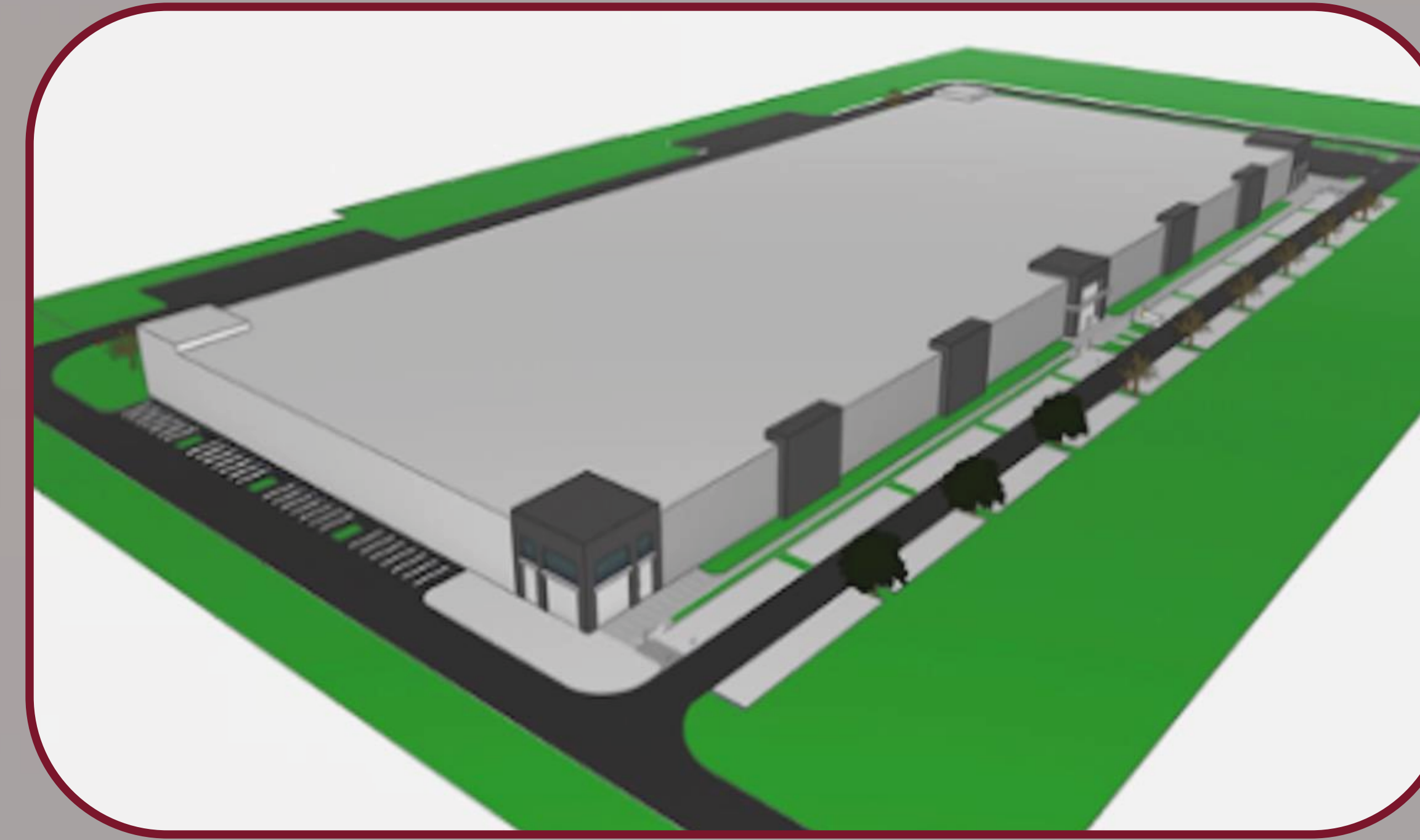
LAND DEVELOPMENT INVOLVES PLANNING, DESIGN, AND CONSTRUCTION OF INFRASTRUCTURE FOR RESIDENTIAL, COMMERCIAL, & INDUSTRIAL PURPOSES.

- ZONING REGULATIONS
- BUILDING CODES
- ENVIRONMENTAL REGULATIONS
- LAND USE PLANNING
- GEOTECHNICAL CONSTRAINTS
- UTILITY COORDINATION
- ACCESSIBILITY STANDARDS
- TRAFFIC ENGINEERING STANDARDS

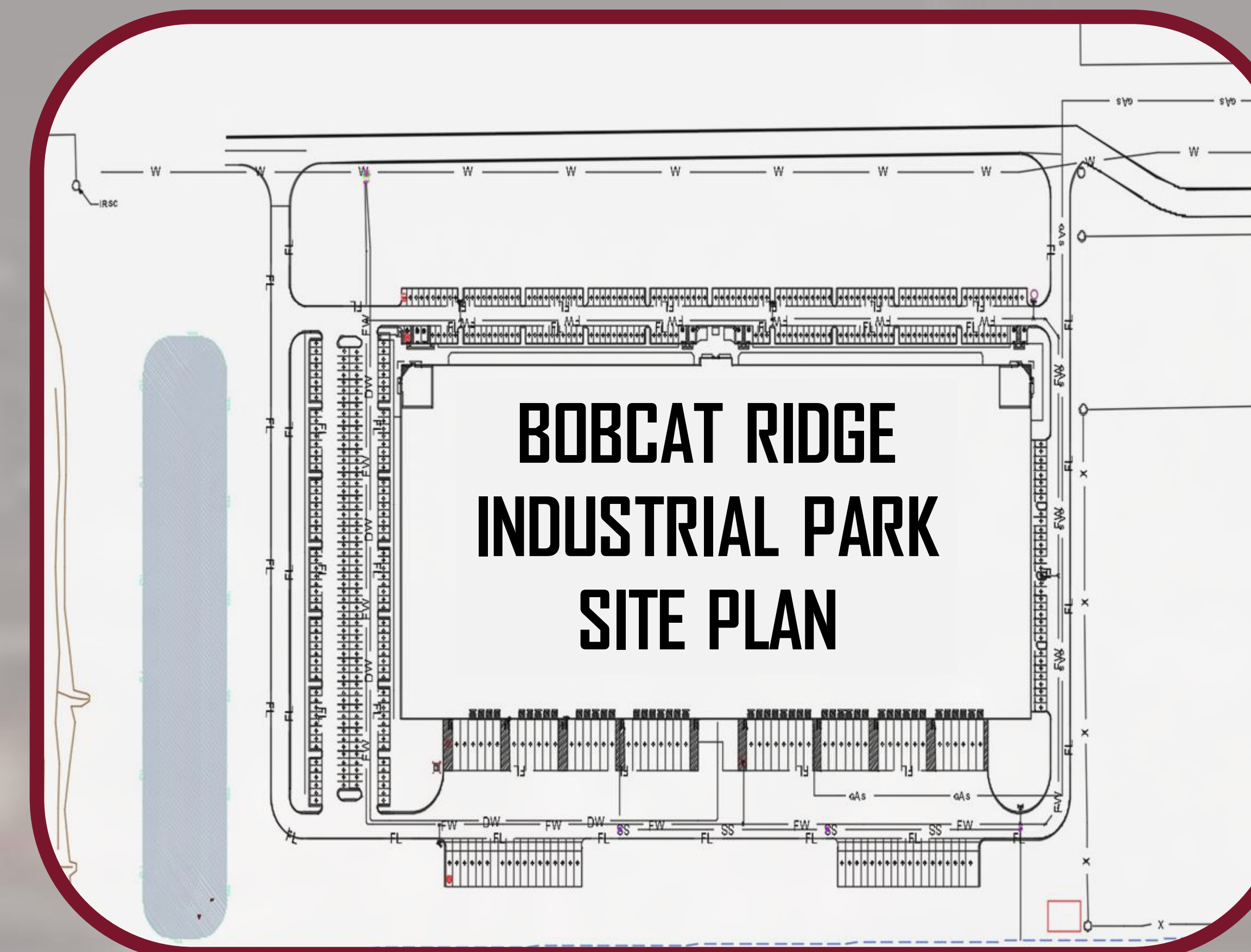
SUSTAINABILITY FRAMEWORK

LOW IMPACT DEVELOPMENT (LID) PRACTICES THAT USE OR MIMIC NATURAL PROCESSES

- BIOSWALES
- MINIMIZE TOTAL DISTURBANCE
- REDUCE IMPERVIOUS SURFACES



3D RENDERING OF THE BOBCAT RIDGE INDUSTRIAL PARK



BOBCAT RIDGE INDUSTRIAL PARK SITE PLAN

ENGINEERING SOLUTION

ENGINEERING SOLUTIONS FOR LAND DEVELOPMENT INVOLVE THE APPLICATION OF TECHNICAL PRINCIPLES AND PRACTICES TO ADDRESS VARIOUS CHALLENGES & OPTIMIZE THE USE OF LAND

- SITE PLANNING
- GRADING AND EARTHWORK
- UTILITIES DESIGN
- ROAD & TRANSPORTATION DESIGN
- DRAINAGE DESIGN

TRAFFIC IMPACT ANALYSIS

A TRAFFIC IMPACT ANALYSIS (TIA) IS A STUDY CONDUCTED TO ASSESS & EVALUATE HOW THE INCREASED TRAFFIC GENERATED IMPACTS A PROPOSED LAND DEVELOPMENT

- TRIP GENERATION
- TRIP DISTRIBUTION
- TRAFFIC ASSIGNMENT
- LEVEL OF SERVICE (LOS) ANALYSIS

Count location	Count station	2016	2017	2018	2019	2020	Average Annual Growth
IHD east of Ackerman RD	HP881	79,582	83,333	90,448	84,293	40,653	-11.33%
Corner way Blvd east of Loop 410	15HP1064	1,197	1,197	1,505	1,781	1,712	10.06%
Binz-Engleman Rd east of Ackerman	15HP155	5,865	6,509	6,965	6,019	5,190	-2.34%

GRAPH OF ANNUAL TRAFFIC GROWTH

DRAINAGE CALCULATIONS

DRAINAGE CALCULATIONS ARE CRUCIAL FOR LAND DEVELOPMENT TO ENSURE PROPER MANAGEMENT OF STORMWATER RUNOFF AND PREVENT ISSUES SUCH AS FLOODING, EROSION, & WATER QUALITY DEGRADATION

- RATIONAL METHOD
- RAINFALL & RUNOFF ANALYSIS
- HYDROLOGIC ANALYSIS
- HYDRAULIC ANALYSIS
- PEAK FLOW CALCULATIONS
- TIME OF CONCENTRATION

Rainfall Intensity-Duration-Frequency Coefficients for Texas

Based on United States Geological Survey (USGS) Scientific Investigations Report 2004-5041 "Atlas of Depth-Duration Frequency of Precipitation Annual Maxima for Texas"

1. Select English or SI Units
English

2. Select or Enter a County
Bexar

3. Enter a Time of Conc. Select Units
41 min

Coefficient	50% (2-year)	20% (5-year)	10% (10-year)	4% (25-year)	2% (50-year)	1% (100-year)
e	0.8208	0.8043	0.8075	0.7943	0.7893	0.7889
b (in.)	59.68	73.54	90.56	102.29	116.01	133.97
d (min)	9.96	9.56	10.73	10.64	10.41	11.01
Intensity (in./hr)	2.37	3.13	3.74	4.46	5.18	5.93

CAPITAL & LIFE-CYCLE COSTS

(*Estimated Initial Costs for Bobcat Ridge Project | 410,000sq.ft.)

City of San Antonio Development Services Fee	\$11,000
Project Manager	\$40,000
Land Acquisition	\$2 million (in 2019)
Warehouse (Materials etc.)	\$26 million
Equipment costs	\$200,000 (6-month time frame)
Land clearing (excavation etc.)	\$28,000
General liability insurance costs (\$0.40 up to 2\$/sq.ft.)	\$820,000 (yearly premium)
Labor costs	\$2.9 million
Total Initial Costs = \$32,000,000	

(Table 1 – Initial Development Services Fees)

Life-Cycle Costs Calculator		Units
Blocks shown as light blue are editable		
initial cost premium of alternative IC =	31999000	\$
yearly energy cost saving COST _{energy} =	1673378	\$
yearly maintenance cost reduction COSR _{maint} =	40800	\$
Lifetime (years) See Table 1.0 =	75	years
Discount Rate =	4.0	%
equal series present worth factor See Table 1.0 ESPWF =	23.6800	-
equal series present worth factor Calculated ESPWF =	1.0569	-
Calculated Results		
Life Cycle cost (calc'd with table 1.0 data) LCC =	72590735	\$
Life Cycle cost calculated LCC =	33810746	\$

