

STORMWATER UTILITY CALCULATIONS AND CREDITS

CITY OF PALM BAY PUBLIC WORKS

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STORMWATER UTILITY CALCULATIONS

Parcel data utilized information available from the Brevard County Property Appraiser.

Data included the following:

- **Parcel Identification**
- **Tax Identification**
- **Owner's name and mailing address**
- **Lot, Block, Subdivision, and Acreage**
- **Use Code**



STORMWATER UTILITY CALCULATIONS

Use Code was utilized to distinguish the type of property as a fixed rate or the parcel was measured for pervious and impervious surfaces.

All Use Code with an “R”, representing residential, were assigned a fixed rate based upon the following:

- Single-Family Residential developed = 1 Equivalent Residential Unit (ERU)
- Single-Family Residential undeveloped = 0.4 ERU
- Duplex = 0.88 ERU
- Triplex = 0.82 ERU
- Quadraplex = 1.97 ERU
- Townhome/Condominium = 0.28 ERU
- Mobile Home = 0.53 ERU



STORMWATER UTILITY CALCULATIONS

All Use Code with an “C”, representing commercial, were measured utilizing aerial photography for pervious and impervious surface areas. Calculation of the ERU for these parcels is as follows:

- Impervious area (SF) + 15% of Pervious area (SF) = Effective Impervious Area (EIA)
- # of ERU's = EIA (SF)/4602 (SF)
- Example 1: 10 acre parcel built out to 80% therefore
 - 10 acres * 43,560 SF/acre = 435,600 SF,
 - Impervious area = 435,600 SF * 0.80 = 348,480 SF,
 - Pervious area = 435,600 SF - 348,480 SF = 87,120 SF
 - EIA = 348,480 SF + (0.15)*87,120 SF = 361,548 SF
 - # of ERU's = 361,548 SF/4,602 SF = 78.6 ERU's



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- **Example 2: 10 acre parcel undeveloped therefore**
 - **10 acres * 43,560 SF/acre = 435,600 SF,**
 - **Impervious area = 0 SF = 0 SF,**
 - **Pervious area = 435,600 SF**
 - **EIA = 0 SF + (0.15)*435,600 SF = 65,340 SF**
 - **# of ERU's = 65.340 SF/4,602 SF = 14.2 ERU's**



STORMWATER UTILITY CREDITS

RESIDENTIAL CREDITS:

- Rain Barrels
 - Greater than 30 Gallon capacity
 - No leaks and non-metallic
 - One time \$25 credit on bill
 - No discount for multiple barrels.



ACCEPTABLE RAIN BARRELS



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STORMWATER UTILITY CREDITS

RESIDENTIAL CREDITS:

- **Pervious Driveways**
 - **Three hundred seventy-five (375) square feet or greater in area**
 - **80% minimum pervious**
 - **Maximum grade not to exceed three percent (3%)**
 - **Constructed of asphaltic concrete, Portland cement based concrete, recycled rubberized material, or other material capable of bearing vehicular traffic**
 - **Either replaces existing driveway or initial driveway installation**
 - **One time credit of fifty dollars (\$50.00)**
 - **Driveway permit fee for replacement will be forgiven**
 - **Resurfacing of pervious materials will result in revocation and forfeiture of granted credit, charged future fees, and subject to driveway permit fees.**



STORMWATER UTILITY CREDITS

NON-RESIDENTIAL CREDITS:

- Retention Systems

- Eligible for credit up to one hundred percent (100%) of the amount of the user fee
- Percentage of stormwater runoff from 25-year, 24-hour storm event which is retained on the property
- Credit is directly proportional to volume of runoff retained
- Example: Soils for the property in the developed condition have a Composite Curve Number (CN) of 84
 - Available storage of stormwater in the soils prior to runoff is $S=(1000/CN)-10=(1000/84)-10=1.9''$ stored in soils.
 - A 25-year, 24-hour storm event produces 9.5'' of rainfall, therefore runoff is $9.5'' - 1.9'' = 7.6''$
 - A dry pond system is designed to retain 1'' of runoff prior to discharge.
 - Amount of runoff retained is $1''/7.6'' = 0.132*100\% = 13.2\%$ Credit



STORMWATER UTILITY CREDITS

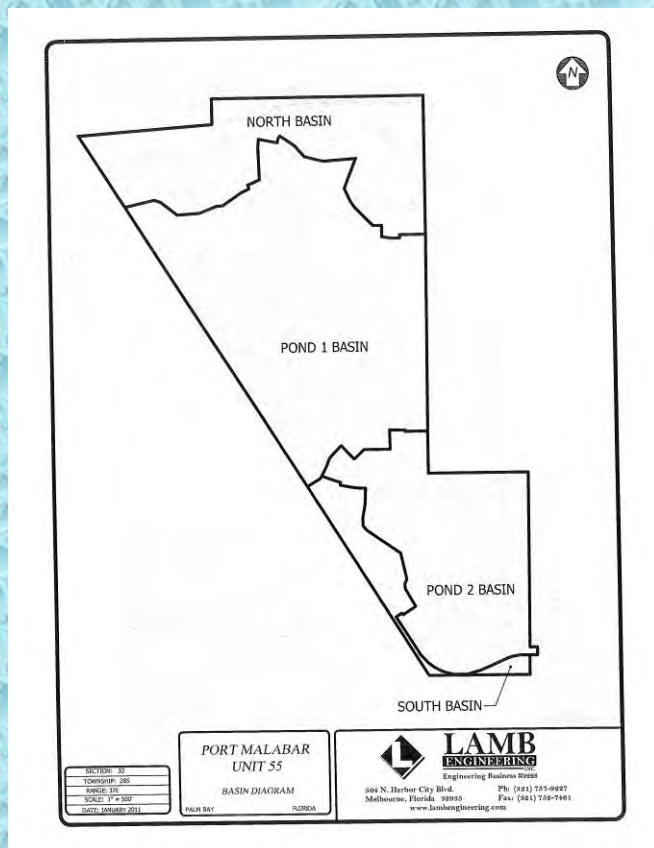
NON-RESIDENTIAL CREDITS:

- Detention Systems
 - Eligible for credit up to fifty percent (50%) of the amount of the user fee
 - Ratio of parcel's runoff from 25-year, 24-hour storm event with the detention facilities as compared to without
 - Credit is proportional to the percentage of runoff rate reduction achieved
 - Example: A developed site, through hydraulic routing, produces 100 cubic feet per second (cfs) of runoff entering the detention facility
 - Routing through the detention facility produces 10 cfs exiting through a control structure
 - Ratio of runoff rate reduction is $10 \text{ cfs}/100 \text{ cfs} = 0.10$
 - Amount of credit available is $1 - 0.10 = 0.90 * 50\% = 45.0\%$ Credit

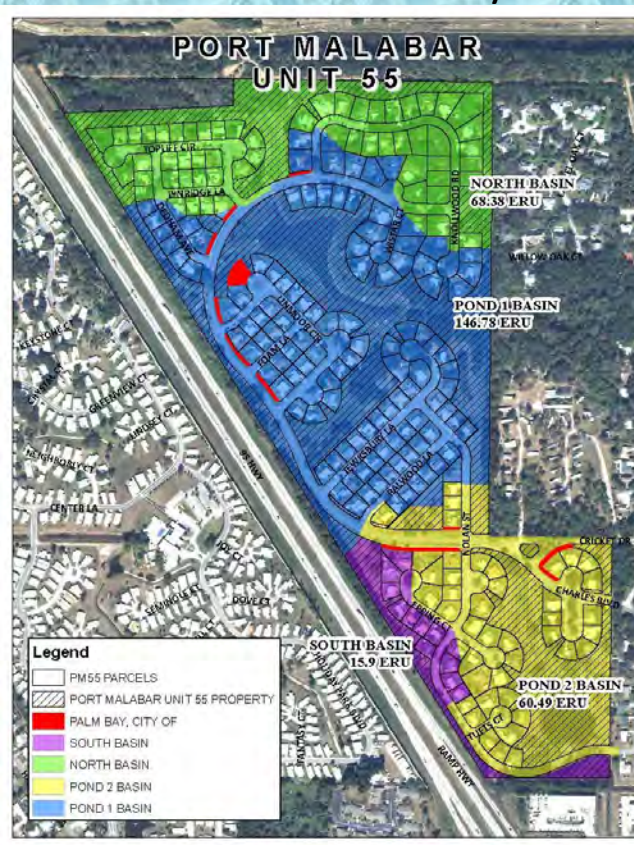


STORMWATER UTILITY CREDITS

Consultant Data Provided



Conversion to Palm Bay GIS



STORMWATER UTILITY CREDITS

NON-RESIDENTIAL CREDITS:

- Retention and Detention Systems combined
 - Utilizing the examples above, credit for retention is 13.2 %
 - Credit for detention is 45%
 - Total credit applied to parcel is $13.2\% + 45\% = 58.2\%$



STORMWATER UTILITY CREDITS

**Example: PUD Sandy Pines Preserve 1 & 2
with Acorn Storage, Medicine Shop, Port
Malabar Boulevard, and Sandy Pines
Drive.**



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Questions and Answers

