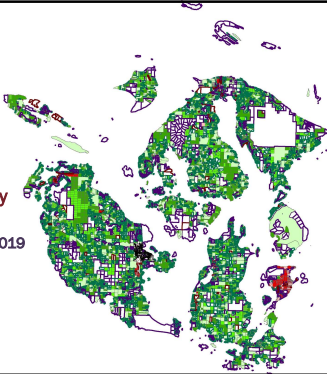


Land Capacity Analysis

Gross Developable Lands Inventory (GDLI)

San Juan County Council June 17 and 18, 2019
 Planning Commission June 21, 2019
 Department of Community Development
 Adam Zack, Planner III



June 5 Staff Report

Attachments:

- May 23, 2019, draft *Land Capacity Analysis Methodology*
- Draft *Land Capacity Analysis Methodology* criteria and LCA Script Translation
- Process for Validation of Script Results
- Gross Developable Land Inventory Maps – Ferry Served Islands

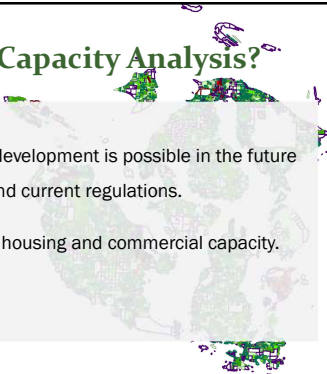
Link to staff report:

<https://www.sanjuanco.com/DocumentCenter/View/18555>



What is the Land Capacity Analysis?

- It helps us understand what development is possible in the future given existing development and current regulations.
- It is used to determine future housing and commercial capacity.
- Important in sizing the UGAs.



How is 'land capacity' measured?

- It is measured in possible new dwelling units and new commercial/industrial building square footage.
- Capacity will be shown in tables by land use designation.

Steps in the Land Capacity Analysis

Five major steps:

1. Gross Developable Land Inventory (GDLI);
2. Net Developable Land Inventory;
3. Calculate existing development intensities;
4. Calculate and map gross development capacity; and
5. Calculate final capacity.

What is the GDLI?

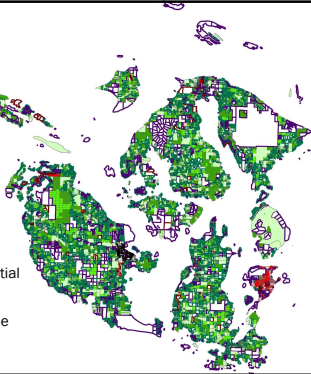
Gross Developable Land Inventory (GDLI)

- It forms the foundation of the remaining steps of the analysis.
- Parcels are assigned a type based on the type of future development allowed (residential, mixed-use, or commercial/industrial).
- Parcels are assigned a category based on existing level of development (partially used, vacant, and/or subdividable).

Why does the GDLI matter?

It shows what parcels are fully or partially developed or vacant and what type of development may take place.

The remaining steps in the Land Capacity Analysis will calculate land capacity in potential dwelling units and square footage of commercial/industrial buildings based on the GDLI.

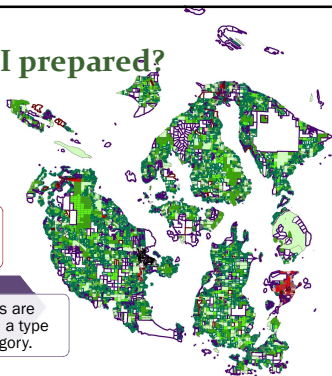


How was the GDLI prepared?

1. Methodology defines type and category criteria.

2. GIS Software applies criteria to parcel data.

3. Parcels are assigned a type and category.



GDLI Part One

Methodology defines type and category criteria.



Parcel Types

Land Capacity Analysis GDLI Parcel Types.

Type	Description
R	Residential.
CI	Commercial and Industrial.
MU	Mixed Use. The land use designation allows for a mix of commercial and residential uses.
P	Public, Utility, and Conservation. Parcels with this type have existing uses that preclude additional development (i.e. public parks, platted open space, parcels with electrical sub-stations, etc.).
''	N/A. These parcels are located in the County but the County does not have jurisdiction over them (i.e. Town of Friday Harbor).

Five Parcel Types

- Based on the land use designation or Assessor's land use codes.
- This criteria is shown in the definition column of Table 1 in the Methodology, page 8.

Table 1. LCA Categories: Thresholds and Assumptions

LCA CATEGORY	DEFINITION	THRESHOLDS/ASSUMPTIONS
A. Fully Developed Residential (No further development potential)	Land Use Designation: Agricultural Reserve (AR), Green Ridge (GR), Conservation (C), Rural Residential (RR), Rural Entry (RE), Village Residential (VR), Urban Residential (UR), Suburban Residential (SR), Medium Density Residential (MDR), Single-Family Residential (SFR), and Rural (R).	Parcels in these land use designations are considered fully developed if the following criteria apply: 1. The assessed improvement value is $\geq \$10,000$ to $\leq \$25,000$. 2. The value of allowed density by parcel size is ≥ 0.25 ac.
B. Partially Used Residential (Can be further subdivided or developed)	Land Use Designation: Single-Family Residential (SFR), Medium Density Residential (MDR), and Rural (R).	3. Parcels developed with multi-family use (Assessor value $\geq \$250,000$ in any designation and the building to land value (BVL) ratio is ≥ 1.5).
C. Vacant Residential (Can be further subdivided or developed)	Land Use Designation: Single-Family Residential (SFR), Medium Density Residential (MDR), and Rural (R).	
D. Vacant and Subdividable Residential (Can be further subdivided or developed)	Land Use Designation: Single-Family Residential (SFR), Medium Density Residential (MDR), and Rural (R).	
E. Re-developable Residential (Can be further subdivided or developed)	Land Use Designation: Single-Family Residential (SFR), Medium Density Residential (MDR), and Rural (R).	

Parcel Categories

Land Capacity Analysis GDLI Parcel Categories.

Category	Description
0	Fully-developed. Property that is assumed to have no further development capacity.
1	Partially Used. Residential property occupied by a use allowed by its land use designation which contains enough land to be further subdivided or developed.
2	Vacant. Property with minimal or no building improvements.
3	Vacant and Subdividable. Vacant property that can also be further divided into smaller lots.
4	Re-developable. A parcel that has a land use designation that allows uses that would be more intensive than an existing use (i.e. a parcel with a single-family home in a commercial land use designation).
5	N/A. Parcels in this category are located in the County but the County does not have jurisdiction over (i.e. Town of Friday Harbor)

Six Parcel Categories

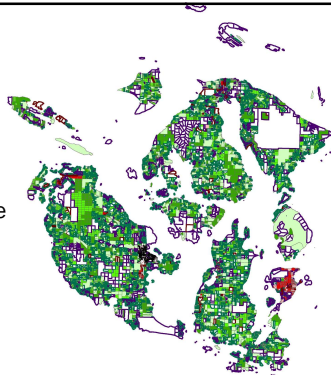
- Categories are based on the parcel type, and thresholds & assumptions in the Draft *Methodology*.
- The criteria is in the thresholds/assumptions column of Table 1 in the Draft *Methodology*.

Table 1. LCA Categories: Thresholds and Assumptions

LCA CATEGORY	DEFINITION	THRESHOLDS/ASSUMPTIONS
A. Fully Developed Residential (see further development potential)	Land Use Designation: Agricultural Reserve (AR), Forest Reserve (FR), Conservation (C), Rural Residential (RR), and the Triad (TR)	Parcels in these land use designations are considered fully developed if the following criteria apply:
GIS Data Category: 2 (50,000-100,000)	Conservation (C), Rural Residential (RR), and the Triad (TR)	1. The assessed improvement value is 0.5 or higher (GIS Data: 0.5)
	Upper Village Residential (UVR), Suburban Residential (SR), Exurban Rural Residential (ERR), and the Triad (TR)	2. The ratio of allowed density to parcel size is 0.25 or less
	Upper Village Residential (UVR), Suburban Residential (SR), Exurban Rural Residential (ERR), and the Triad (TR)	3. The parcel is developed with multi-family use (Assessor code 2000-2000) in any designation and the building lot land value (BVL) ratio is 0.5 or less
	Upper Village Residential (UVR), Suburban Residential (SR), Exurban Rural Residential (ERR), and the Triad (TR)	4. The parcel is developed with multi-family use (Assessor code 2000-2000) in any designation and the building lot land value (BVL) ratio is 0.5 or less
	Upper Village Residential (UVR), Suburban Residential (SR), Exurban Rural Residential (ERR), and the Triad (TR)	5. The parcel is developed with multi-family use (Assessor code 2000-2000) in any designation and the building lot land value (BVL) ratio is 0.5 or less
	Upper Village Residential (UVR), Suburban Residential (SR), Exurban Rural Residential (ERR), and the Triad (TR)	6. The parcel is developed with multi-family use (Assessor code 2000-2000) in any designation and the building lot land value (BVL) ratio is 0.5 or less
	Upper Village Residential (UVR), Suburban Residential (SR), Exurban Rural Residential (ERR), and the Triad (TR)	7. The parcel is developed with multi-family use (Assessor code 2000-2000) in any designation and the building lot land value (BVL) ratio is 0.5 or less
	Upper Village Residential (UVR), Suburban Residential (SR), Exurban Rural Residential (ERR), and the Triad (TR)	8. The parcel is developed with multi-family use (Assessor code 2000-2000) in any designation and the building lot land value (BVL) ratio is 0.5 or less
	Upper Village Residential (UVR), Suburban Residential (SR), Exurban Rural Residential (ERR), and the Triad (TR)	9. The parcel is developed with multi-family use (Assessor code 2000-2000) in any designation and the building lot land value (BVL) ratio is 0.5 or less
	Upper Village Residential (UVR), Suburban Residential (SR), Exurban Rural Residential (ERR), and the Triad (TR)	10. The parcel is developed with multi-family use (Assessor code 2000-2000) in any designation and the building lot land value (BVL) ratio is 0.5 or less

GDLI Part Two

Developed the GIS software script that applies type and category criteria to the parcel data.



How was the GDLI prepared?

Staff prepared a script to apply the methodology criteria using GIS software to assign type and category to the 17,000+ parcels.

- The script applies a series of logical statements to the parcel data to assign type and category.
- It uses the criteria from the Draft *Methodology*.
- The criteria from the Draft *Methodology* and script are provided side-by-side in Attachment B of the staff report.

A Note on the Data Source

- Land and building values shown come from a snapshot of Assessor's parcel data from March 3, 2017 to provide a static data set (Methodology page 7).
- The GDLI web map is for **planning purposes only**.

Assessor's disclaimer:

- The land use codes used by the Assessor's office describe the primary use of the property as determined by the appraiser at the time of the physical inspection, generally occurring only once every six years. If there is more than one use or characteristic of the property, the codes will not reflect all uses or characteristics. The codes are not useful for determining allowable use under planning and development rules.

Geographic Information Systems

- GIS is a computer program that allows us to geographically understand, analyze, and represent data.
- It associates geographic features such as parcels with a data table, similar to an Excel spreadsheet.
- This data can be presented visually by a map.
- Staff used ESRI ArcPro and ArcMap 10.4 to conduct this analysis.

GDLI Part Three

GIS assigns the type and category to parcels based on their existing development and possible future development.

Assigned Type and Category

- Once the GIS script has run, each parcel has an assigned type and category based on the Draft *Methodology*.
- The pairing of type and category is represented by the colors on the GDLI map.

Order of Operations

- Pairings of type and category are assigned in a specific order based on Table 1 of the Draft *Methodology*.
- The order is designed to resolve conflicts when a parcel meets two separate sets of criteria.

Assigned Type and Category Combinations

There are eleven different possible combinations of assigned type and category.

- | | |
|---|---|
| • 0, R: fully developed residential. | • 1, R: partially-used residential. |
| • 0, CI: fully developed commercial/industrial. | • 2, CI: vacant commercial/industrial. |
| • 0, P: Fully developed public, utility, and conservation. | • 2, MU: vacant mixed-use. |
| • 3, R: vacant and subdividable residential. | • 4, CI: re-developable commercial/industrial. |
| • 2, R: vacant and non-subdividable residential. | • 4, MU: re-developable mixed-use. |
| | • 5, ‘-’: Not applicable. |

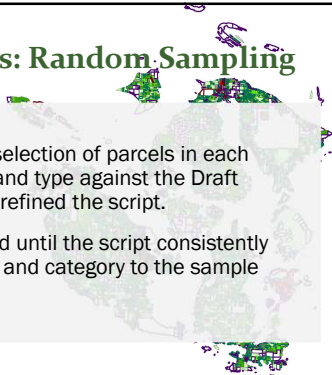
Checking Results

Staff checked the type and category results in two phases outlined in Attachment C of the staff report.



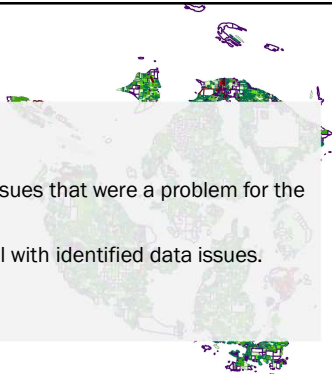
Validating Results: Random Sampling

- Staff checked a random selection of parcels in each combination of category and type against the Draft *Methodology* criteria and refined the script.
- This process was repeated until the script consistently assigned the correct type and category to the sample parcels.



Spot-Check

- Some parcels had data issues that were a problem for the script calculations.
- Staff checked each parcel with identified data issues.



Spot-Check

- This process is discussed in Attachment C of the staff report.
- It includes a list of all the parcel types and/or categories reassigned by spot-check.

Spot-Check Example

- Cemetery parcels were typed wrong. Usually their 'building value' is zero. The script could not use zero in the calculations resulting in the wrong type.
- Staff selected all tax exempt parcel including cemeteries.
- Using that selection, staff hand checked and corrected the type/category for all cemeteries as needed.

GDLI Web Map

A map showing the assigned parcel type and category is available online at:

<http://sjcgis.maps.arcgis.com/home/index.html>
Look under 'Featured Content'

Map Legend

Legend	
GDLI	
Category, Type	
	Fully Developed Residential
	Partially Used Res.
	Vacant, Non-subdividable Res.
	Vacant Subdividable Res.
	Fully Developed Commercial
	Re-developable Com.
	Re-developable Mixed-Use
	Vacant Commercial
	Vacant Mixed-Use
	Public, Utility, Conservation
	N/A



Reviewing the GDLI Web Map

Map Tips

- The search bar allows you to search by parcel number or address.
- The information buttons below the search bar provide helpful information about what is shown on the map.
- Layers and a legend are available using the buttons in the upper-right corner.
- Remember: [the GDLI web map is for planning purposes only.](#)

Step One: Zoom to a Parcel

The search bar in the upper left corner allows you to search by parcel number or address.



Step Two: Click on the Parcel

Clicking on a parcel will open a pop-up window that shows the information used to assign the type and category.



Step Three: Compare the Assigned Type/Category

All of the criteria for assigning type and category are provided in Table 1 of the *Land Capacity Analysis Methodology*.

LCA CATEGORY	DEFINITION	THRESHOLDS / ASSUMPTIONS
E. Vacant Non-Subdivisible Residential GIS Data Category: 2 GIS data type: R	Land Use Designations: Agricultural Resource (AG) Forest Resource (FOR) Conservancy (C) Rural Residential (RR) Rural Farm Forest (RFF) Village Residential (VR) Hamlet Residential (HR) Lopez Village Residential (LVR) Eastsound Residential (ER) Eastsound Rural Residential (ERR) Eastsound Rural (ER*) Village Res./Institutional (VR/I) Olga Hamlet Residential (OHR), Deer Harbor Hamlet Residential (DHRH) Orcas Village Residential (OVR)	Parcels in these land use designations will be considered vacant but not sub-divisible if they meet the following criteria: a. The assessed improvement value is < \$45,000 \$27,000 and b. The ratio of allowed density to parcel size is > 0.5

*With several densities

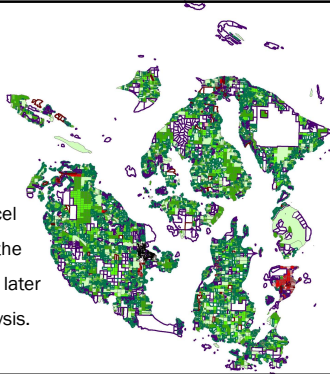
Step Four: Note a Proposed Correction

If you feel that a property may require a different type or category, note the parcel number, assigned type/category, what change you propose, and an explanation of why the change is justified. Using a table like the example below is preferred.

Parcel Number	Script Assigned Category/Type	Proposed Category/Type	Explanation

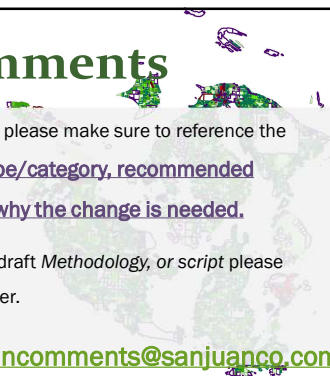
Public Comments

Comments on the assigned parcel type and category as shown on the GDLI web map will help with the later steps of the Land Capacity Analysis.



Public Comments

- If commenting on the web map, please make sure to reference the parcel number, assigned type/category, recommended type/category, and explain why the change is needed.
- If commenting on the May 23rd draft *Methodology, or script* please include the page and line number.
- Send comments to compplancomments@sanjuanco.com



Comment Example

- One comment mentioned that several neighboring properties seemed to have the wrong category.
- It appeared that the script did not calculate one of the fields correctly within this land use designation (Eastsound Rural Residential).
- Staff corrected this part of the script to resolve the issue.

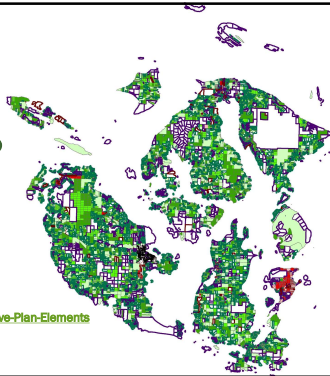


Questions?

Comprehensive Plan

Project Website

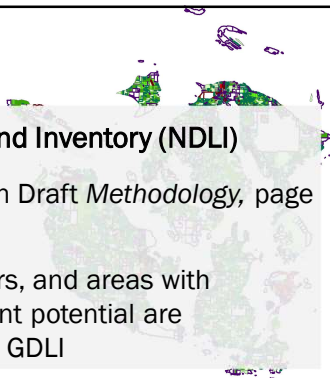
<https://www.sanjuanico.com/1306/Comprehensive-Plan-Elements>



Next Steps

Net Developable Land Inventory (NDLI)

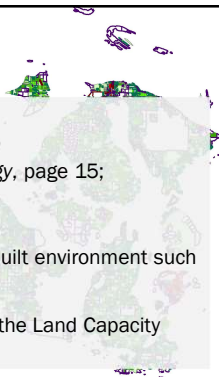
- Process described in Draft *Methodology*, page 13;
- Critical areas, buffers, and areas with reduced development potential are subtracted from the GDLI



Next Steps

Summarize Development Trends

- Process described in Draft *Methodology*, page 15;
- This step does not result in a map;
- Tables will summarize aspects of the built environment such as existing floor area ratios; and
- This step will provide more context for the Land Capacity Analysis results.



Next Steps

Calculate Gross Capacity

- Process described in methodology, beginning on page 18;
- This step will produce a map of gross housing unit capacity and gross commercial/industrial building capacity (square footage);
- The map will show where residential and commercial/industrial development may take place; and
- Gross capacity will not include reductions such as market factors.

Next Steps

Calculate Final Capacity

- Process described in methodology, beginning on page 21;
- This step will result in a series of tables showing housing unit capacity and gross commercial/industrial building capacity (square footage) by land use designation; and
- Final capacity will not be mapped because it is provided as totals per land use designation.

Next Steps

Calculate Final Capacity

- Final capacity will include the following reductions:
 - Market Factor – 25%
 - Seasonal Home Factor (residential only) – 35%
 - Public Use Factor – 5%
