DSP Participant Projection Model
Projection Model

NOVA SCOTIA

Agenda

- **Project Introduction/Background**
- **Assumptions**
- **Model Inputs**
- **Model Outputs**

Projection Introduction/Background

Introduction

- The Disability Support Program (DSP) is looking to predict the growth of the DSP program to better prepare for the expansion of services to provide support for more individuals across Nova Scotia
- Currently, there is more demand than DSP is able to service based on the existing waitlist
- Analysis was conducted using various datasets to better understand the current DSP population as well as potential future participants
- The following slides will highlight the project approach and the model developed including the inputs and the growth outputs

Project Approach

The following are project approach steps taken to support the identification and preparation for DSP future growth in Nova Scotia

POTENTIAL NEXT STEPS

Dataset Analysis

Collect necessary data and information. Review and compare datasets (DHW and DSP) to develop general analysis findings to better understand the data

Growth Identification

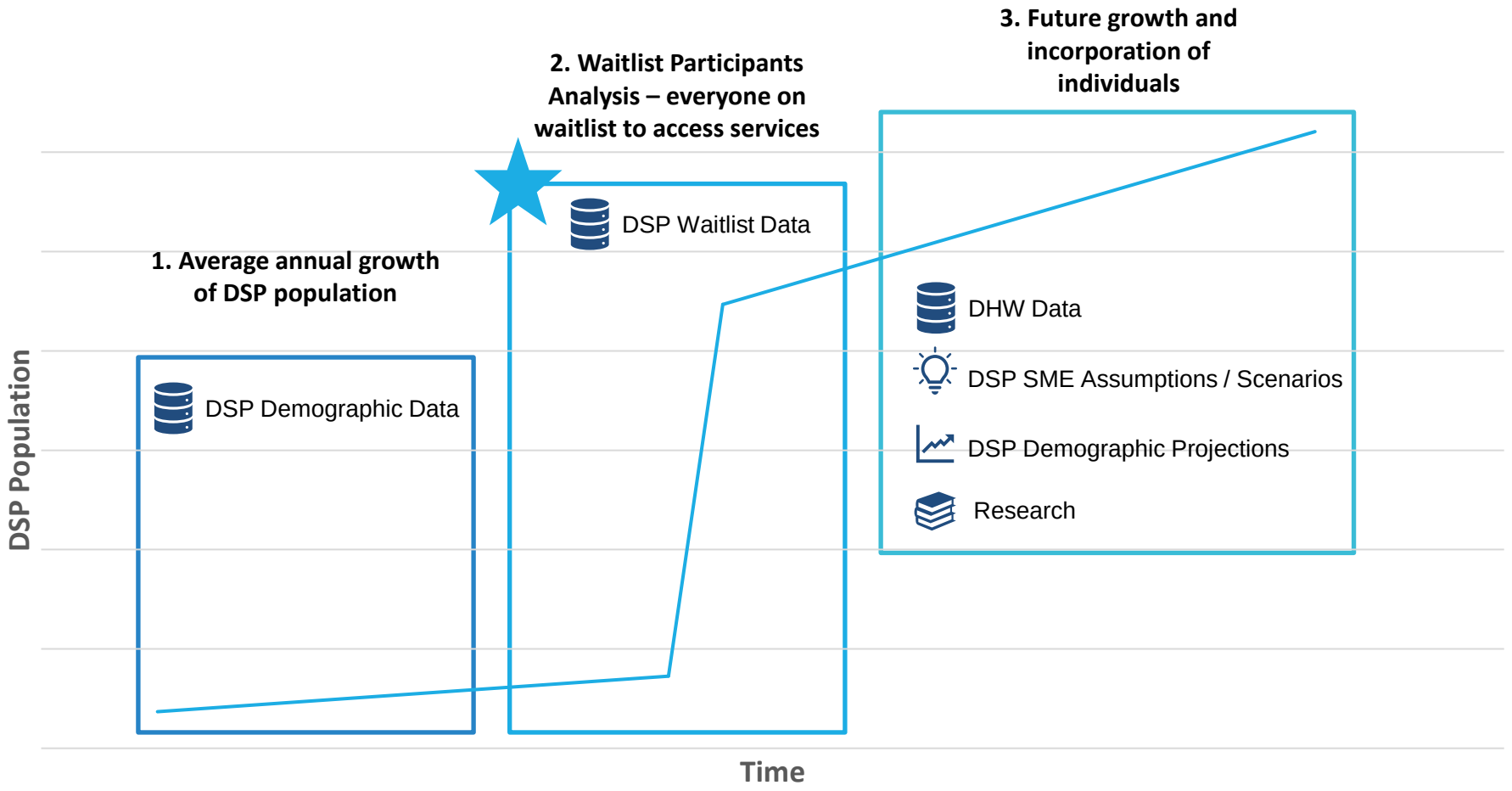
Identify historic growth of individuals accessing DSP services and those on the waitlist to understand the number of individuals who may access DSP services in the future

Costing

Using the analysis completed, develop new costing scenarios to identify future costs due to projected growth

Growth Identification | **Stages**

Using the current DSP demographic data, eliminating the waitlist, and taking potential new participants into consideration, the graph below is an assumption of the growth of the DSP population



Growth Identification | **Waitlist Participant Analysis**

Growth Identification

Waitlist Participant Analysis

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- Roughly 71% of individuals on the waitlist data are currently accessing DSP services (1,138 out of the 1,700 on the waitlist)

- By identifying and mapping these individuals to the current DSP data, **changes in services/categories** or level of supports can be accounted for.
  - There would be no change to the overall number of individuals accessing DSP services however, the program utilization would differ to ensure category preferences are provided

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- The remaining ~29% of individuals on the waitlist data who are not currently accessing DSP services would be **net new demand** and would increase overall program utilization

* *Waitlist stats to be updated with new waitlist data provided on September 22nd*

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Assumptions

Assumptions | **Placement Re-Categorization**

- Considering the future state of DSP, some categories have been changed, renamed or grouped under pre-existing categories
- To better understand the projected growth and desired access to each category, both the DSP demographic dataset and the DSP waitlist data were updated to include the same **main 4 categories** (along with a few outliers). Below is the updates made to the **demographic dataset**

Flex – Independent	1	• Flex – Independent – ID • Flex – Independent – PD • Flex – Independent – MH
Flex – In Home	2	• Flex - In Home – ID • Flex - In Home – PD • Flex - In Home – MH • IHS – MH • IHS – PD • IHS - ID
Independent Living Support	3	• Pending Transfer IHS • SA – PD • SA – ID • SA – MH • ILS – Mental Health • ILS – I Disabled • ILS – P Disabled
Alternative Family Support	4	• AFS – I Disabled • AFS – Mental Health • Associate Families
Community Home	5	• RRC • RCF • Customized • SO – PD • SO – ID • SO – MH • SO – Seniors • GH & DR • ARC • Community Residence

Assumptions | **Category Utilization**

The table below shows the count of individuals with their original case categories and the count after renaming and grouping

Case Category	Original Utilization	Updated Utilization
Alternative Family Support (AFS)	145	**148**
Associate Families	3	
Flex – Independent	33	**33**
Flex - In Home	1,776	**1,806**
IHS	30	
Independent Living Support (ILS)	350	**729**
SA	374	
Pending Transfer IHS	5	
Community Home	709	**2,193**
ARC	348	
Community Residence	4	
Customized	59	
GH&DR	546	
RCF	376	
RRC	151	

Assumptions | **Waitlist Category Grouping**

- The **waitlist dataset** gave individuals the opportunity to put three options for the requested/desired category
- The assumption here is that when given the choice, individuals would choose **the most independent** case category
- The steps below explain the method used to simplify the data analysis to select a primary desired category. This helps to better understand the possible future growth for each category within the DSP services

1. **Flex – Independent**
   If any of the three options contained Flex – Independent, use this as the desired category for the individual

2. **Independent Living Support (ILS)**
   If Flex – Independent wasn't an option and ILS is, use this as the desired category

3. **Alternative Family Support (AFS)**
   If neither of the two categories are listed in the options but ALS is, use this as the desired category

4. **Community Home**
   If all three options do not contain any of the above 3 categories, use Community Home as the desired category

DSP Waitlist Data

Assumptions | **Grouping Combinations**

The tables below is the breakdown of **top 5 option combinations** for each case category within the waitlist dataset

Flex – Independent 1

Total = 174

*	
Independent Living Support, Flex - Independent, None	73
Flex - Independent, Independent Living Support, None	27
Flex - Independent, None, None	16
Independent Living Support, Flex - Independent, Community Home	7
Flex - Independent, Independent Living Support, Community Home	7

Independent Living Support 2

Total = 509

Independent Living Support, None, None	294
Independent Living Support, Community Home, None	53
Community Home, Independent Living Support, None	37
Independent Living Support, Community Home, Group Home	16
Community Home, Group Home, Independent Living Support	15

Alternative Family Support 3

Total = 84

Community Home, Alternative Family Support, None	23
Community Home, Group Home, Alternative Family Support	8
Alternative Family Support, Community Home, None	8
Alternative Family Support, None, None	7
Community Home, Developmental Residence I, Alternative Family Support	5

Community Home 4

Total = 933

Community Home, None, None	323
Community Home, Group Home, None	110
Group Home, Community Home, None	69
Community Home, Developmental Residence I, None	57
Community Home, Developmental Residence III, None	54

* *Waitlist stats to be updated with new waitlist data provided on September 22nd*

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Utilization

There are two steps to predict future utilization:

1. Determine program utilization based on category preference from those currently accessing DSP services and on the waitlist
2. Add the remaining individuals on the waitlist who are not currently accessing DSP services

Case Category	Current DSP Program Utilization	1	Program Utilization with Waitlist Preference *	2	Total Population including Waitlist Participants
Alternative Family Support	148	+Δ53	201	+Δ12	***213***
Flex - Independent	33	+Δ97	130	+Δ66	***196***
Flex – In Home	1,806	-Δ631	1,175	+Δ0	***1,175***
Independent Living Support	729	+Δ147	876	+Δ308	***1,184***
Community Home	2,193	+Δ334	2,527	+Δ176	***2,703***
Grand Total	**4,909**	**+Δ0**	**4,909**	**+Δ562**	***5,471***

* *Waitlist stats / totals to be updated with new waitlist data provided on September 22nd*

Considerations

The main dataset used to develop a projection model included those currently accessing DSP services (portion of these individuals overlapped with those on the waitlist) and the remaining individuals on the waitlist).

The following slides will run through example outputs and inputs from the built model. The outputs are based on initial data and a set of input assumptions. While going through these slides, please use the points below as considerations for discussion:

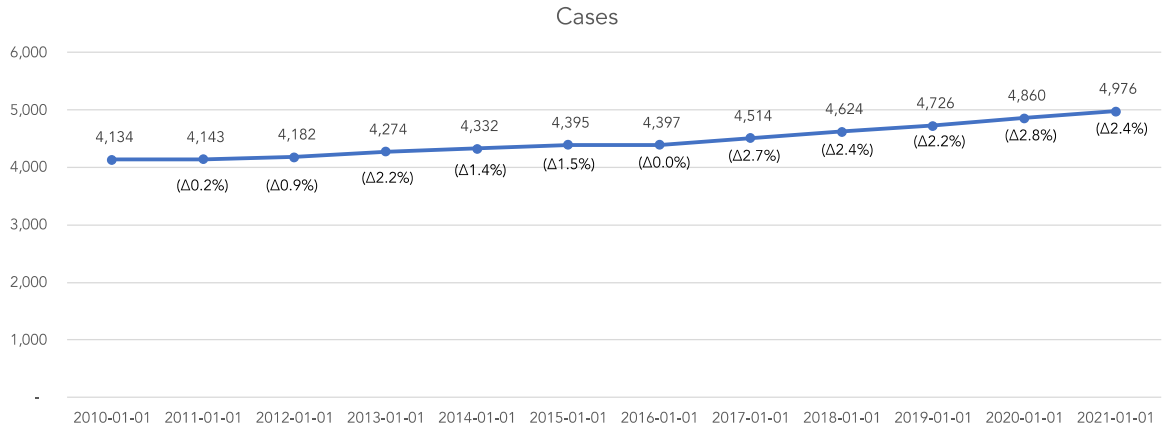
1. Are these the outputs you are hoping to get out of the model? What type of items should the graphs include? (e.g., level of support, age, etc.)

2. Are there changes to the inputs that would better represent growth? (e.g., initial and on-going increases, specific cohorts, etc.)

Model Inputs

Model Inputs | **General Increase**

- Different jurisdictions see varying percentage increases (1-6%) in the number of individuals accessing DSP services. Reviewing the Nova Scotia historic data, there is roughly a 2% average increase over a 10-year period. Using the historic data, an **on-going increase of 2%** was applied to the growth projection model



- One-time increase percentage considers the idea that if changes and/or adjustments are made to the program (e.g., eligibility), there is an expectation that there will be an increase in the number of eligible DSP participants / overall increased interest in use of program

*Waitlist individuals incorporated separately within dataset

	One-Time Increase	*On-Going Increase*
General Time-Based Population Increase	**2%**	**2%**

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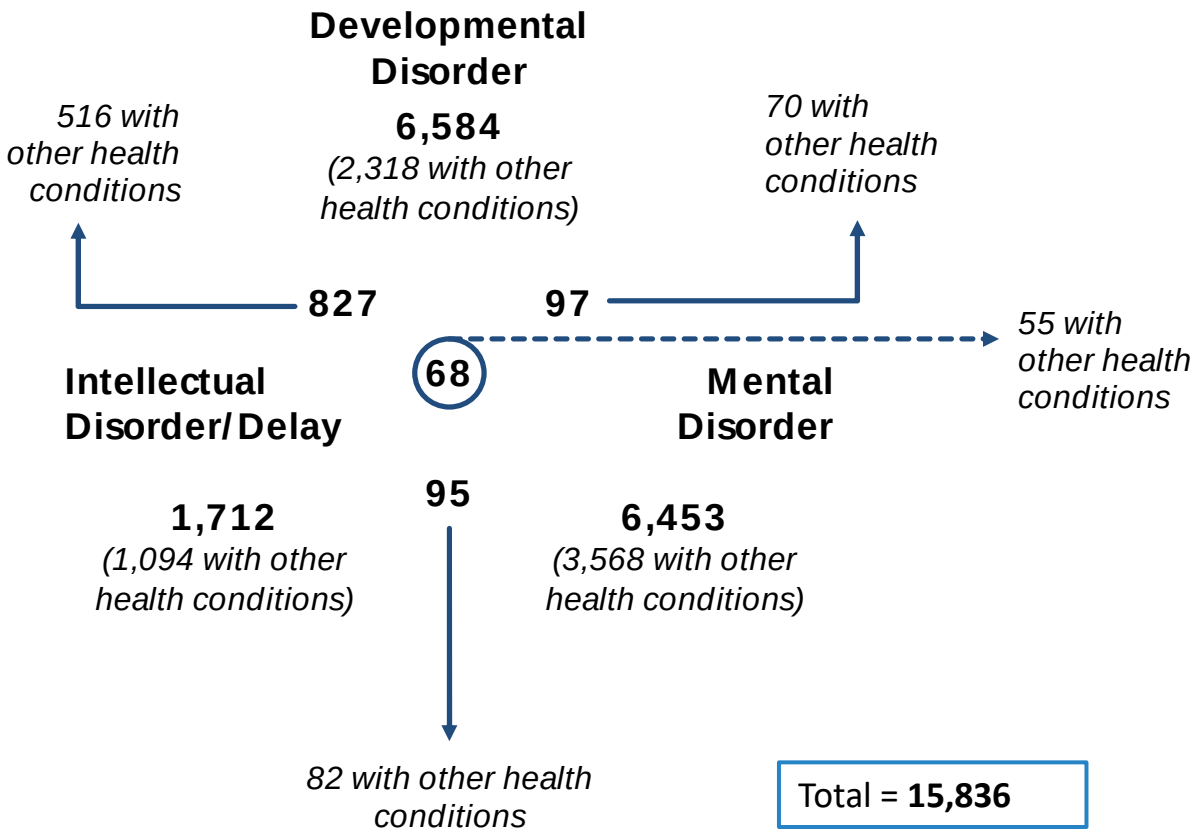
DHW CIHI Data | **Potential One-Time Increase**

- The goal of using the CIHI data is to help inform assumptions related to the **upper end of the overall increase in DSP population**. The assumption made is that any individual with one of the three **primary health conditions** listed below could potentially be DSP participants depending upon eligibility.

- Below shows the distribution of individuals having one or more of the primary health conditions. Since there is not enough information on the detailed nature of these primary conditions including level of support required.

- Taking this into consideration, only a **fraction of the total** would be considered as part of the potential on-going growth of DSP participants



Model Inputs | **Projection Scenarios**

- The model also has ability to make projections based on **scenarios** for **different one-time/on-going increases** for **specific groups/demographics** (e.g., age, diagnosis, level of support, current program, etc.)
- It also can **create grouping of for multiple characteristics** (e.g., current program and age) to create cohorts and model various scenarios based on relevant assumptions on population increases
- Below is an **example snippet** of the cohort development for Alternative Family Support

Modeled Option	Age	Population Count	Cohort Name
Alternative Family Support	***Under 20***	1	AFS Young
	20-29	36	AFS Young
	30-39	30	AFS Young
	40-49	26	AFS Young
	50-59	48	AFS Older
	60-69	56	AFS Older
	70-79	14	AFS Older
	80-89	2	AFS Older
	90-99	-	AFS Older
	100-109	-	AFS Older

Sample Model Outputs

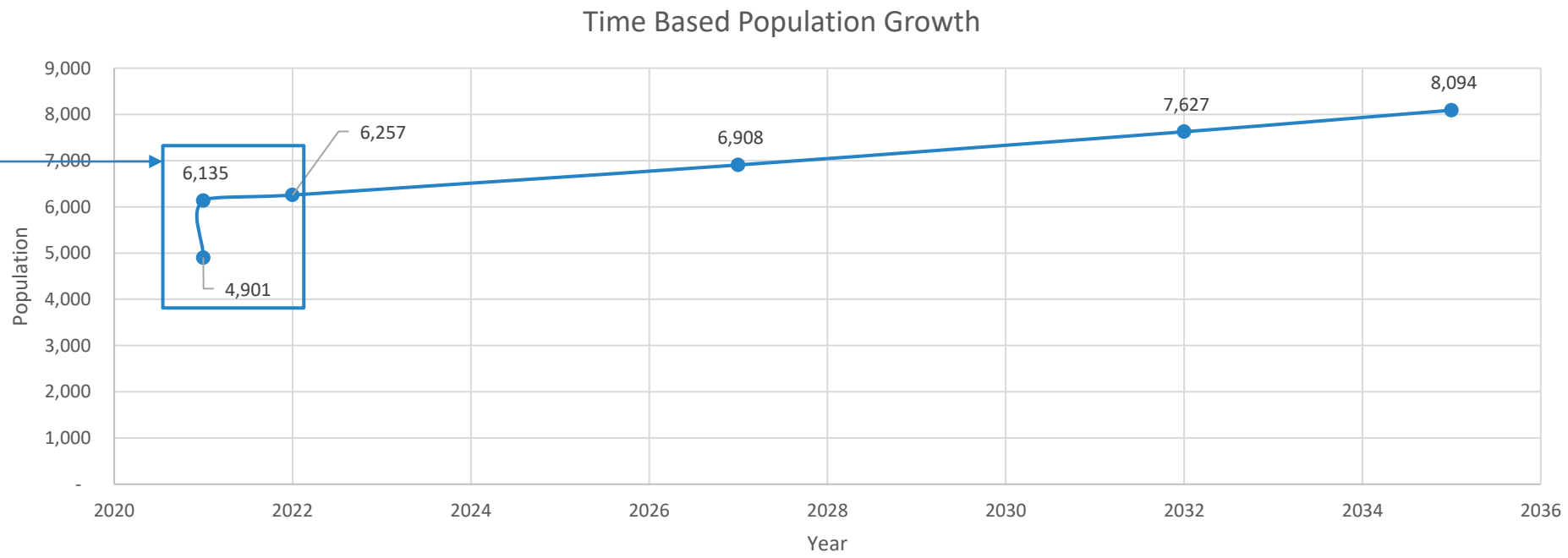
+ Excel Model Demo

Sample Model Outputs | **General**

- Using a general time-based increase including an initial and on-going increase, the graph below displays a simple output of the population growth over a 10+ year period

This is the initial increase which includes:

* Eliminated waitlist - 562 individuals currently on the waitlist who are not accessing DSP services
- 2% increase from current DSP population to anticipate potential increased interest in program



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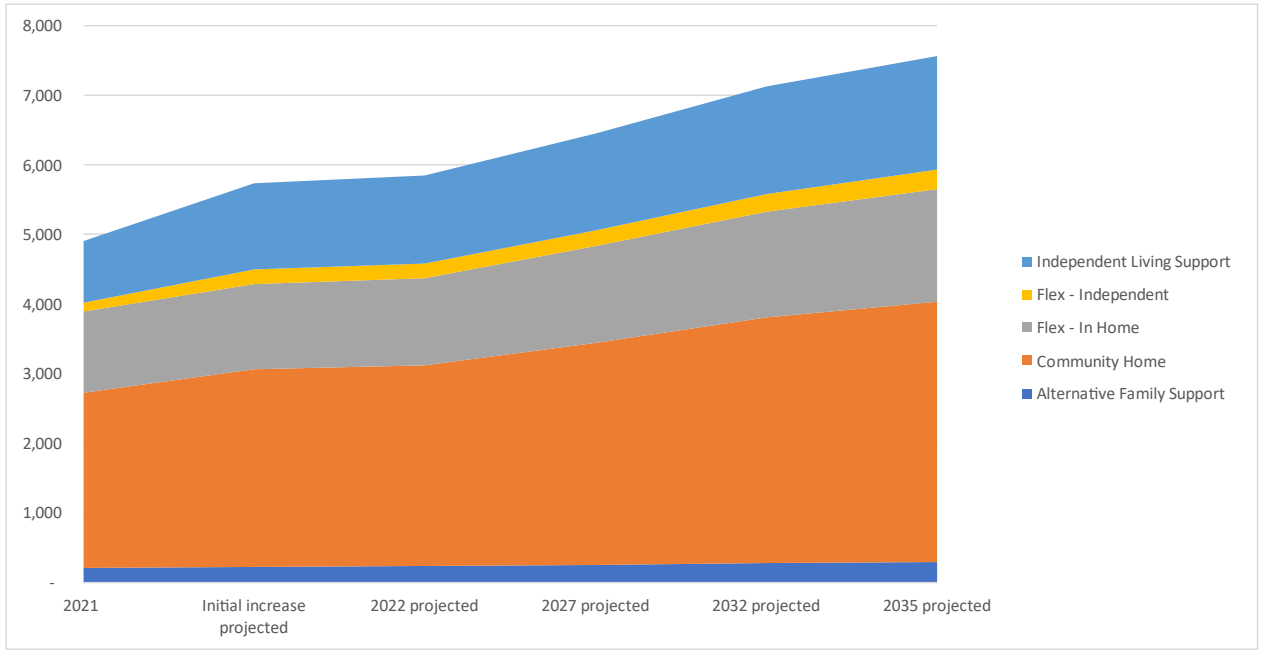
Model Outputs | **Program**

Below is a sample of a graph in the outputs page that shows the **growth in population by current program**. The slicers seen on the right act as filters than can be used to focus on specific programs, age groups, or diagnosis.