

CARLISLE TRENDS

Demographic & Financial

Presenter:
John Ballantine
Wednesday March 27th

Organized by the Carlisle Master Plan Steering Committee and members of the Master Plan Advisory Committee

John W. Ballantine, Jr.

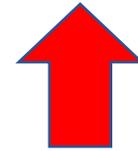
Carlisle resident since 1985

- Housing Authority
- Finance Committee
- Board of Selectmen
- Personnel Committee
- Highland Committee
- Cranberry Bog Committee
- Counsel on Aging
- Carlisle surveys (1989, 2009)
- Carlisle Mosquito
- Growing Pains and CPS building demographics
- Economist and Brandeis professor
- Town volunteer



AGENDA

- Demographics
- Carlisle Public Schools Enrollment
- Budget and Taxes and Burden
- Issues / Challenges / Our Future



????



Demographics

We all get older with changing demands / needs

Our shifting population mix

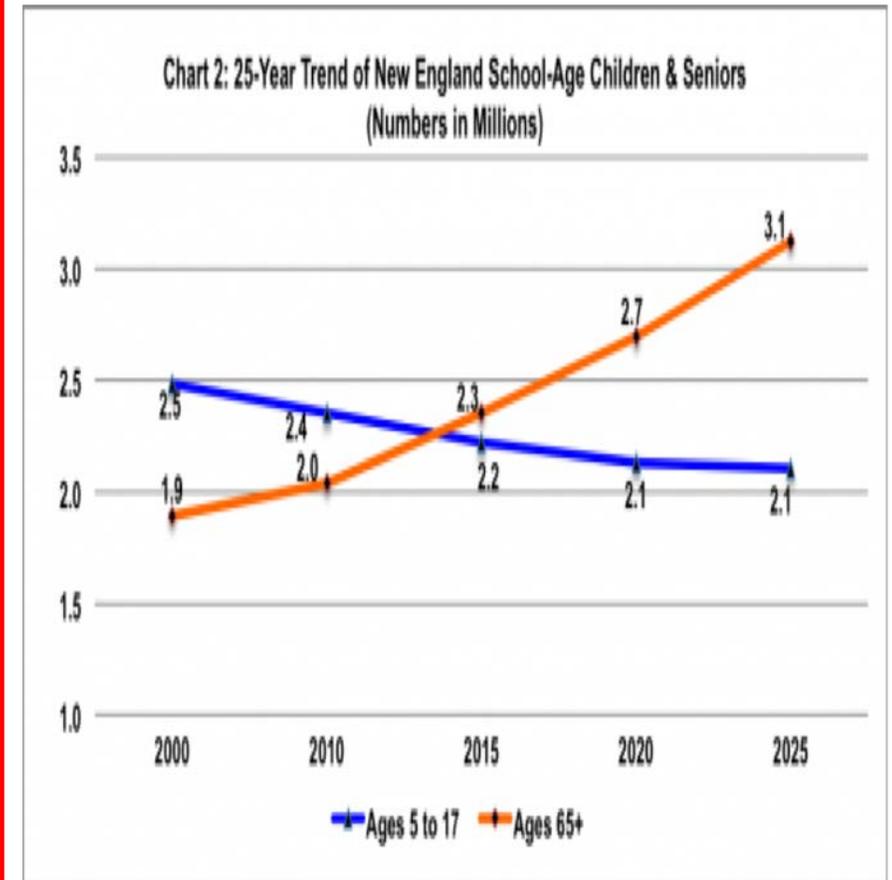
Changing age profile over time

Actual numbers -- USA & Carlisle census

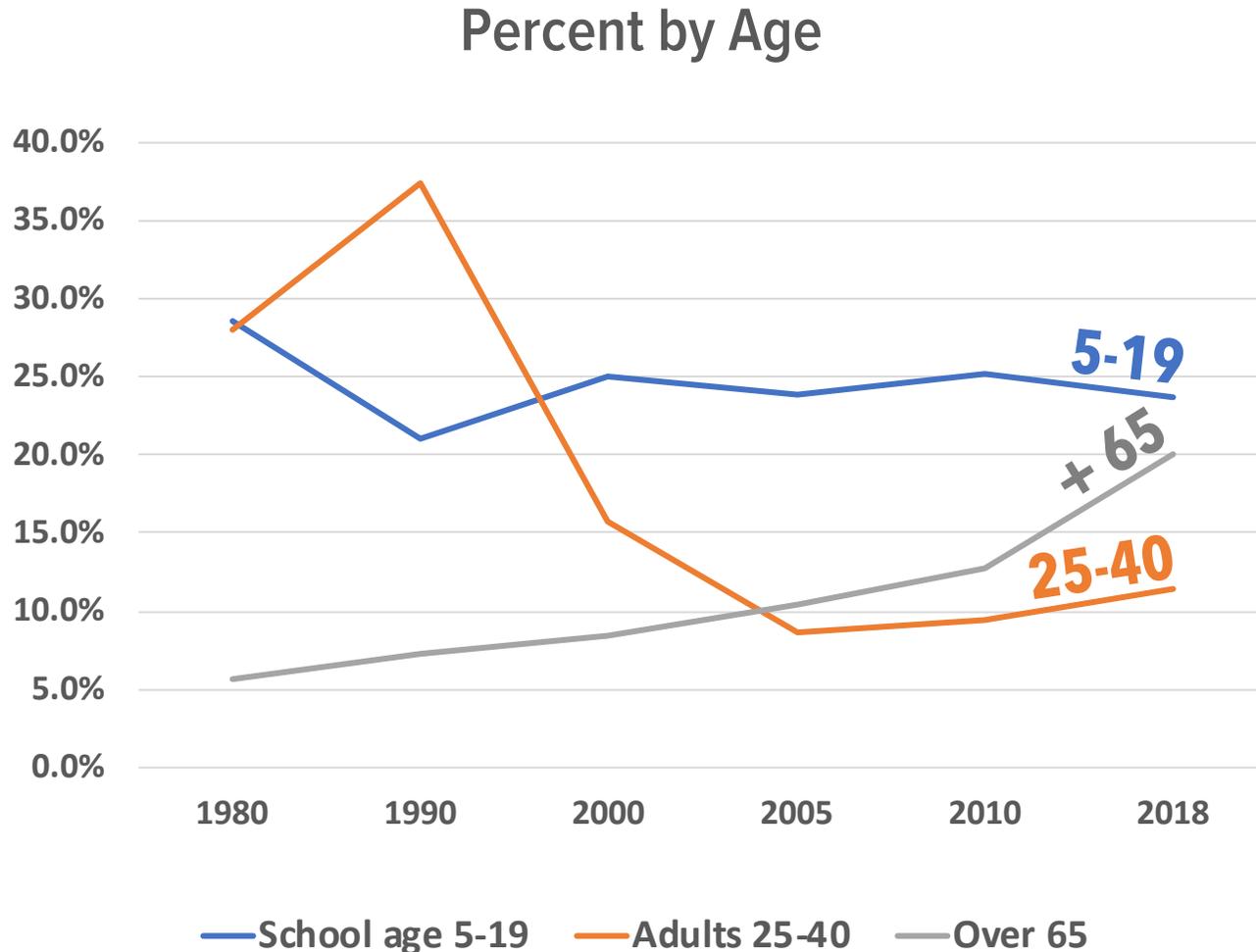
Age	1980	1990	2000	2005	2010	2018
0 - 24	1286	1464	1605	2040	1926	1503
25 - 40	924	1621	740	476	545	589
40 +	1096	1248	2372	2993	3119	3092
Total	3306	4333	4717	5509	5590	5184
50 +	719	1178	1615	1941	2294	2455
over 65	187	313	395	570	715	1040
school, 5 - 19	945	912	1180	1316	1408	1230

Carlisle census

Massachusetts aging population



Carlisle and Massachusetts Are Aging



- Town services and needs
- Population growth, buildable lots
- Housing mix, families, and affordability
- School enrollment
- Life cycle changes: 2030 and 2040

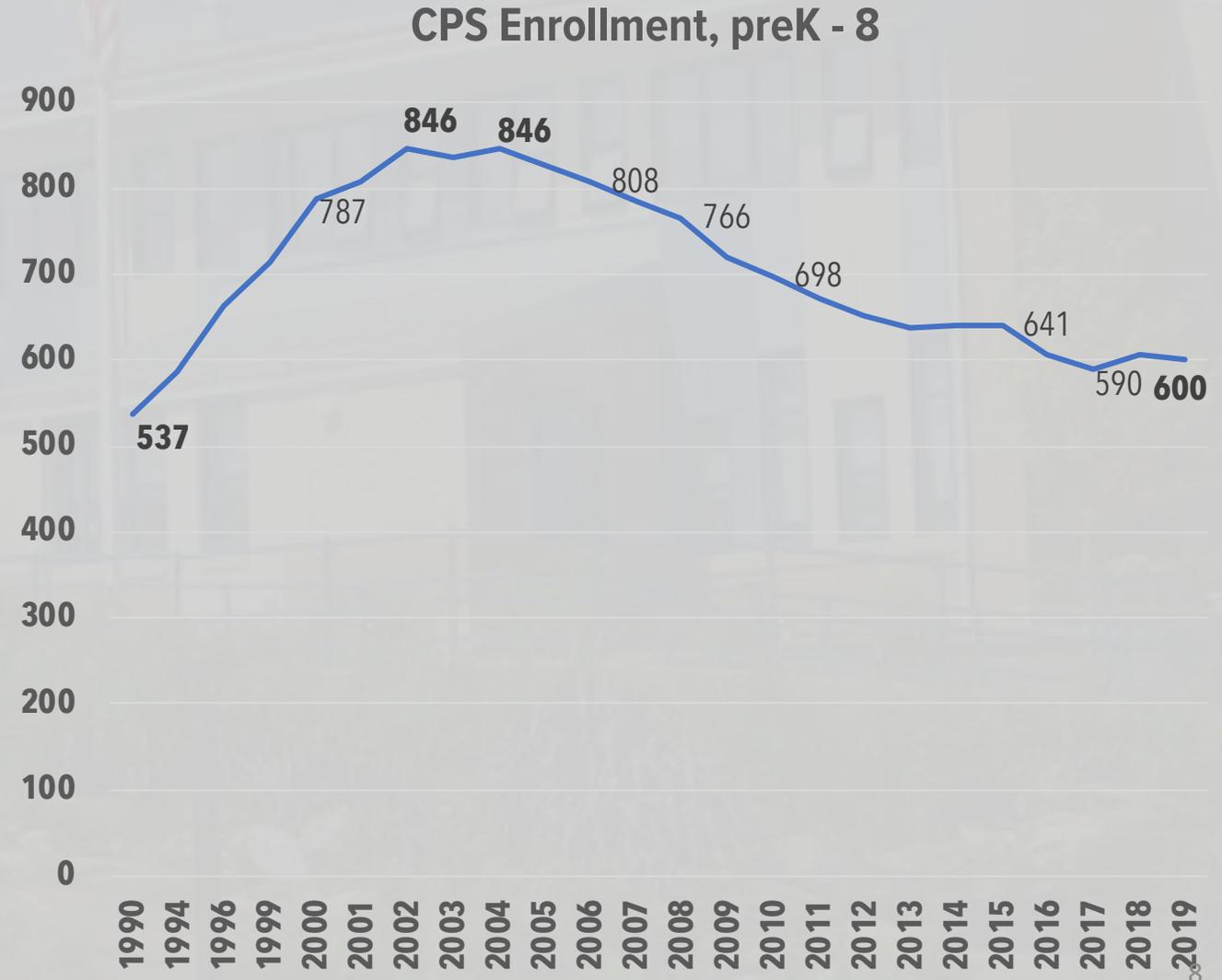


Carlisle Public Schools

- Enrollment trends
- Cohort model
- Costs

Carlisle Public Schools (CPS)

- Growth from
 - 537 in 1990 to
 - 846 in 2002, down to
 - 600 in 2019
- Two school building projects (CPS, CCHS)
 - approximately \$120 million
 - state funding support / debt
 - CPS capacity in 700 + range
- CPS enrollment expected fall to low 600s.
- Why?
 - births
 - move-ins



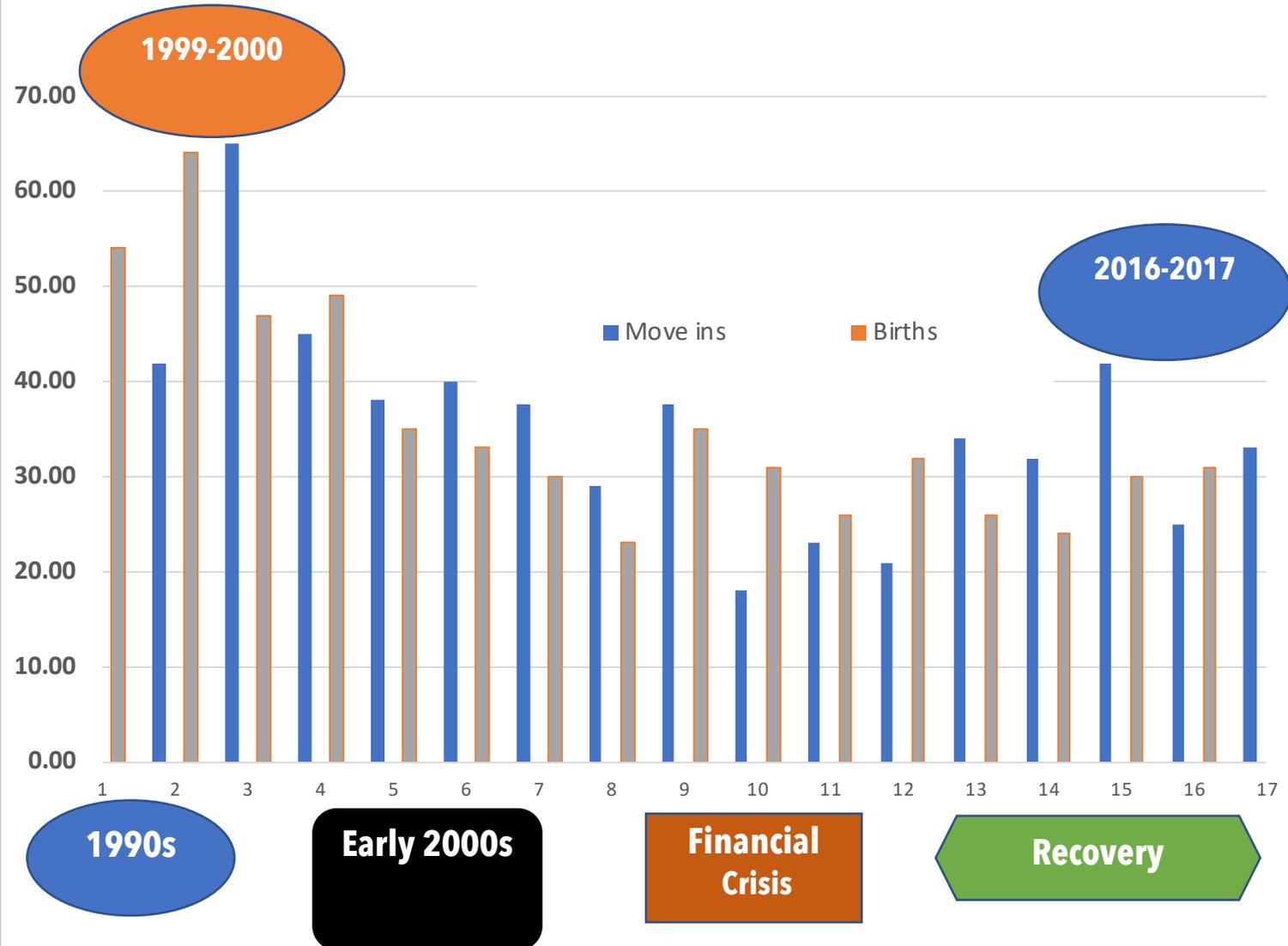
Why Changing Enrollment?

- births part of K class in 5 years
- move-ins distributed K-8

The Cohort model

- births plus move-ins
- over life of CPS student 13 years
- graduate and then part of CCHS

In coming CPS students: births and move-ins



How the Cohort Model Works – Move ins

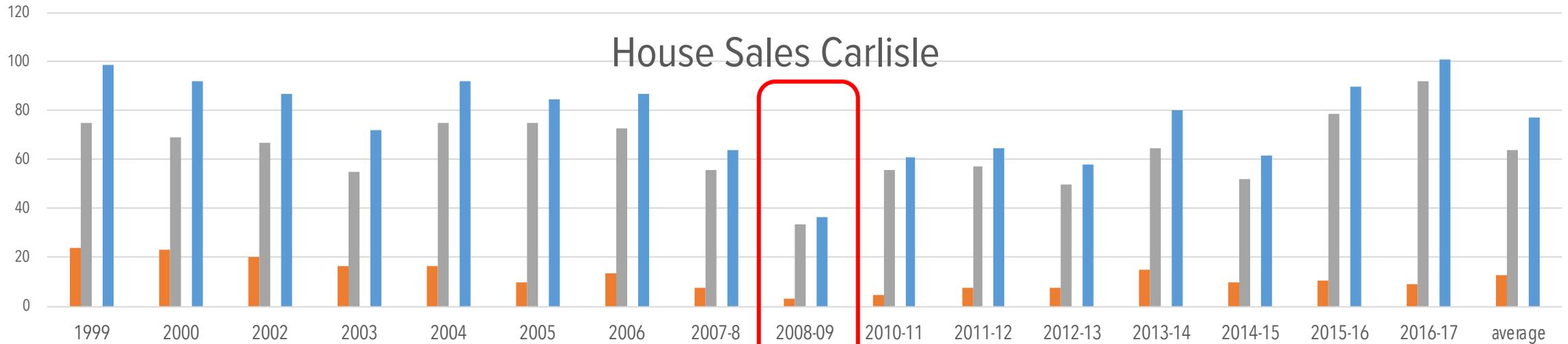
Law small numbers: lots variance with declining inflows tied to sales of Turnover and New homes

INFLOW	<u>1999</u>	<u>2000</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2010</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
of kids																
Pre- school	22	22	18	22	13	33	24	27	20	17	15	17	12	34	13	15
K-8	20	43	27	16	27	8	5	14	-2	6	6	17	20	8	12	18
Annual Net kids for CPS	42	65	45	38	40	41	29	41	18	23	21	34	32	42	25	33

- **Children born** in Carlisle approximately **30-50** are the beginning of the cohort for future K class
- Children move into Carlisle: new homes and turnover homes:
 - pre-school move in kids join a future K cohort depending on age
 - children flow into all age groups / grades -- 6 to 40 flow into various grade levels each year (k-8)
- Total Cohort of one grade is
 - births **plus** inflow pre-k kids flowing into age cohort to K
 - K-8 inflow to respective grade

House Sales in Carlisle

More children in New homes (0.93) vs Turnover (net 0.45)



	1999	2000	2002	2003	2004	2005	2006	2007	2008	2010	2011	2012	2013	2014	2015	2016	average
NEW	24	23	20	17	17	10	14.0	8	3	5	8	8	15	10	11	9	13.3
Turn over	75	69	67	55	75	75	73.0	56	34	56	57	50	65	52	79	92	64.1
TOTAL	99	92	87	72	92	85	87	64	37	61	65	58	80	62	90	101	77.4

**Financial
Crisis**

Examples of Cohort change over time

very dependent on #s and assumptions

- 40 children born in Carlisle
- Over first four years, 20 plus children join specific age cohort
- Starting **K class of 60** (40 + 20)
- Then 20 additional students join the K class cohort or 60 + 20
- Graduating 8th grade of **80** students
- Average class size 60 + 80 over time at Carlisle == **70**
- CPS population based on averages 70 times 9 grades == **630 students**

- 30 children born in Carlisle
- And over first four years 20 plus children join age cohort
- Starting **K class of 50** (30 + 20)
- Then 15 additional students join the K class cohort or 50 + 15
- Graduating 8th grade of **65** students
- Average class size 55 + 65 over time at Carlisle == **58**
- CPS population based on averages 58 time 9 grades == **522 students**

Look At Our Actual Carlisle Cohorts

high count and low count cohorts

CPS	<u>YE 2005</u>	<u>YE 2006</u>	<u>YE 2007</u>	<u>YE 2008</u>	<u>YE 2009</u>	<u>YE 2010</u>	<u>YE 2011</u>	<u>YE 2012</u>	<u>YE 2013</u>	<u>YE 2014</u>	<u>YE 2015</u>	<u>YE 2016</u>	<u>YE 2017</u>	<u>YE 2018</u>	<u>YE 2019</u>
<u>Enrollment</u>															
Pre K	16	14	15	16	15	16	14	13	17	17	12	12	14	8	14
K	79	57	68	73	56	63	47	54	47	69	52	54	51	63	58
1	84	84	62	71	80	62	66	49	60	56	70	52	58	57	62
2	75	88	89	64	76	80	66	69	55	66	58	74	54	60	62
3	95	74	89	88	64	75	79	68	72	61	70	56	73	59	60
4	104	88	76	88	90	65	77	74	66	76	70	63	59	75	62
5	112	106	87	77	87	95	69	75	75	66	76	73	70	65	76
6	88	106	105	83	70	87	95	71	79	75	72	75	70	70	64
7	99	91	104	105	85	72	87	94	70	84	75	68	73	73	71
8	74	100	90	101	97	83	72	86	97	70	86	80	68	76	71
Total CPS	826	808	785	766	720	698	672	653	638	640	641	607	590	606	600

CPS Future Enrollment?

- What **births rates** in Carlisle families -- the stock
- Who **move-ins** to Carlisle -- the flow
- Very dependent on assumptions and housing activity (flow of students into Carlisle for each age cohort)
- Historical averages based on 25 years of data (appendix)
 - inflow of students in New homes (average **1 new** child per home)
 - net inflow of students in Turnover homes (averaged **0.45 net new** child per home)

More **housing sales** then **more students**
coming into Carlisle

Lots of variance, stable Trends

Future Carlisle School Enrollment (CPS)

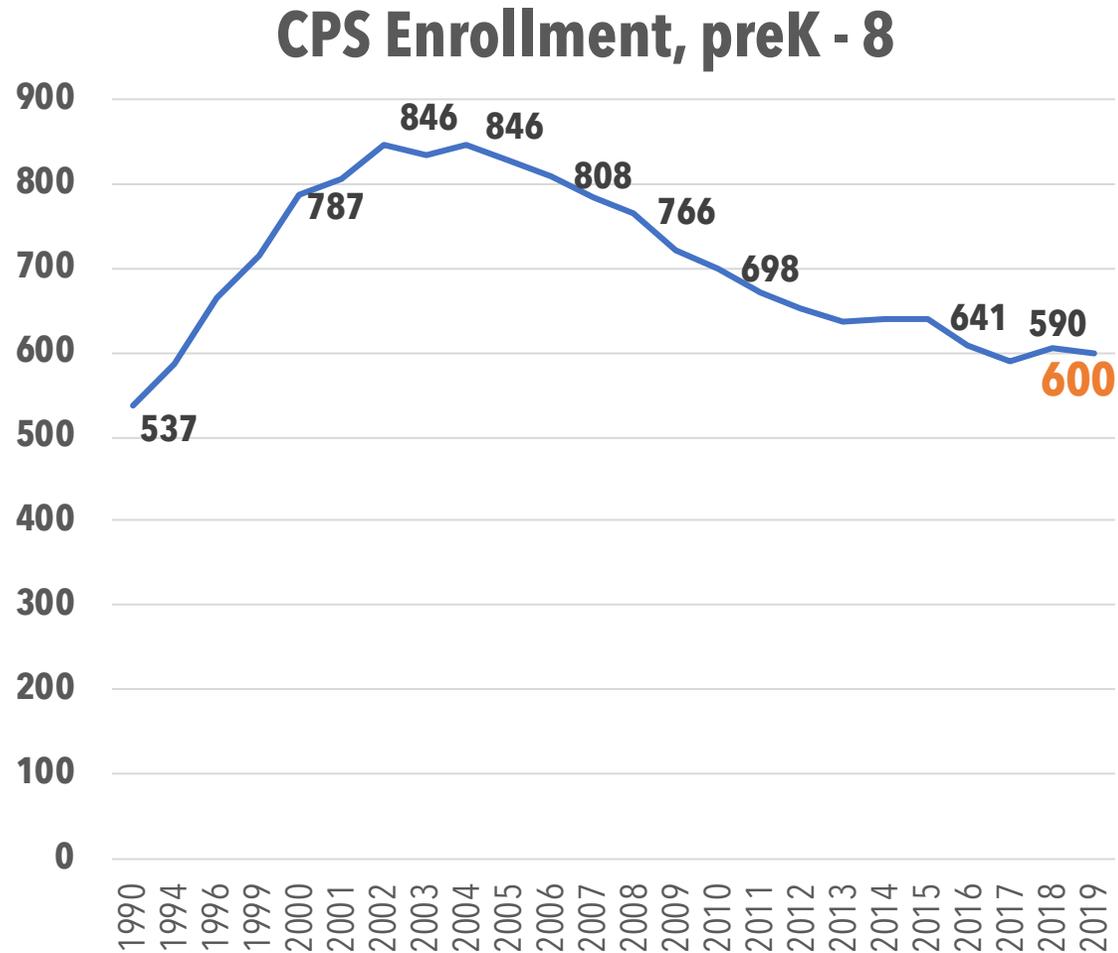
- Start with Births, averaging around 30
- Plus NET inflow of students from New & Turnover SALES averaging 30-40

Future classes at CPS for grade cohort could average in the
60-70 range

- maybe lower, IF fewer NEW home and Turnover sales
- but, demographics could change → more children move in with T/O homes

CPS enrollment range over next **10 years**
520 - 640 plus or minus

CPS Enrollment and Housing Trends



- House sales and price (new & old)
- Births, family size, and new families move into Carlisle
- Sustainable CPS enrollment

**Challenges for CPS:
Capacity, Programs, and
Budget**



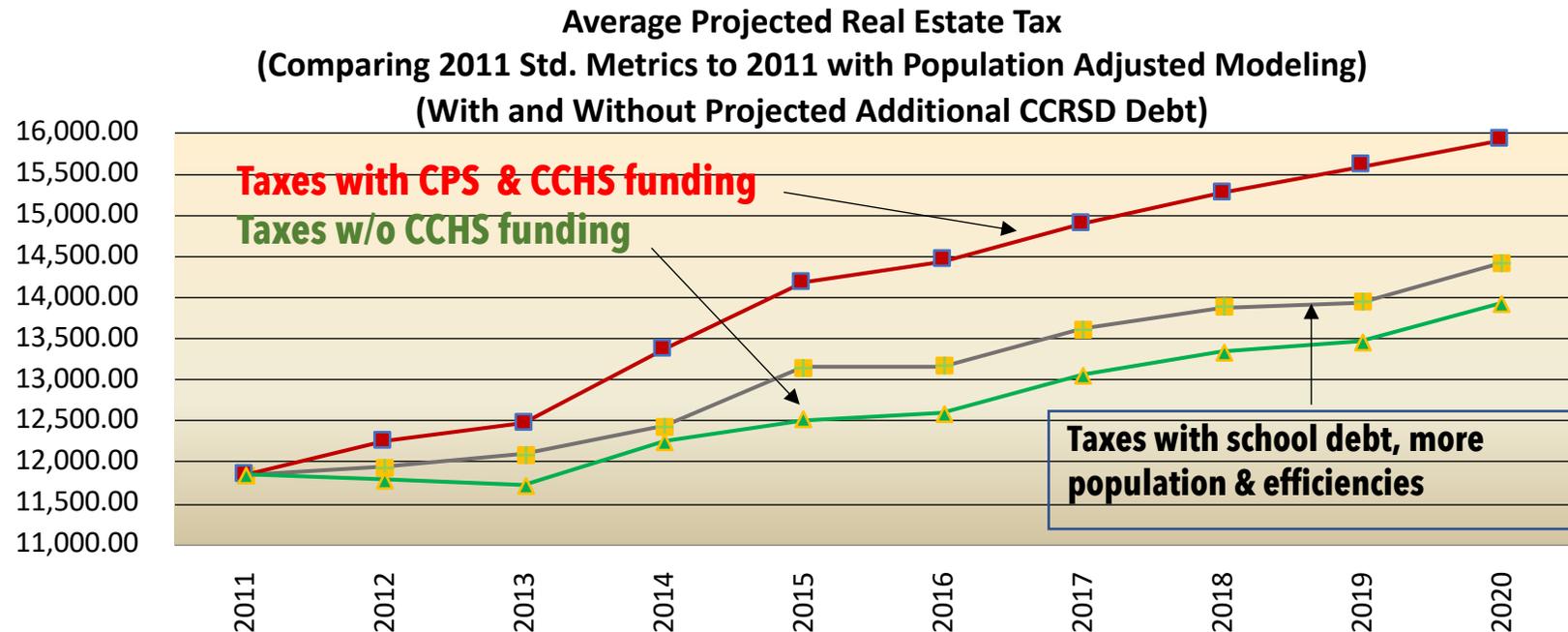
Carlisle Budget and Taxes

Increases over time and tax burden and debt capacity

Finance Director: Larry Barton's budget projections with new school building projects (2009 - 2011)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total town expenditures	23,861,140	24,485,252	24,734,203	25,824,195	26,650,961	27,379,212	28,655,232	29,944,197	30,692,121	32,040,470
Tax rate \$000	16.13	16.55	16.75	17.44	17.82	18.16	18.56	18.98	19.37	19.67
Avg tax rate	11,850.24	12,244.77	12,472.09	13,063.52	13,423.24	13,754.82	14,155.57	14,568.82	14,965.80	15,299.22

- CPS & CCHS education expenditures 62-68% of operating budget expenses
- School project debt service approximately \$1.7-1.8 million
- Need for careful budget controls / modifications



Carlisle Taxes: 2010 to 2019

Carlisle Assessors Office

	2010	2011	2012	2013	2014	2015	2016	2017	2018	% change
Population	5577	5601	5332	5418	5438	5308	5235	5419	5248	(5.9)
Avg. home assessed value	\$ 771,254	\$ 722,226	\$ 694,276	\$ 676,475	\$ 683,051	\$ 690,884	\$ 790,001	\$ 798,061	\$ 809,094	4.9
Tax rate	\$14.62	\$16.13	\$17.14	\$17.68	\$18.64	\$19.00	\$17.20	\$ 17.62	\$ 18.17	24.3
Avg tax bill	\$11,276	\$11,650	\$11,900	\$11,960	\$ 12,732	\$13,127	\$13,588	\$ 14,062	\$14,701	30.4

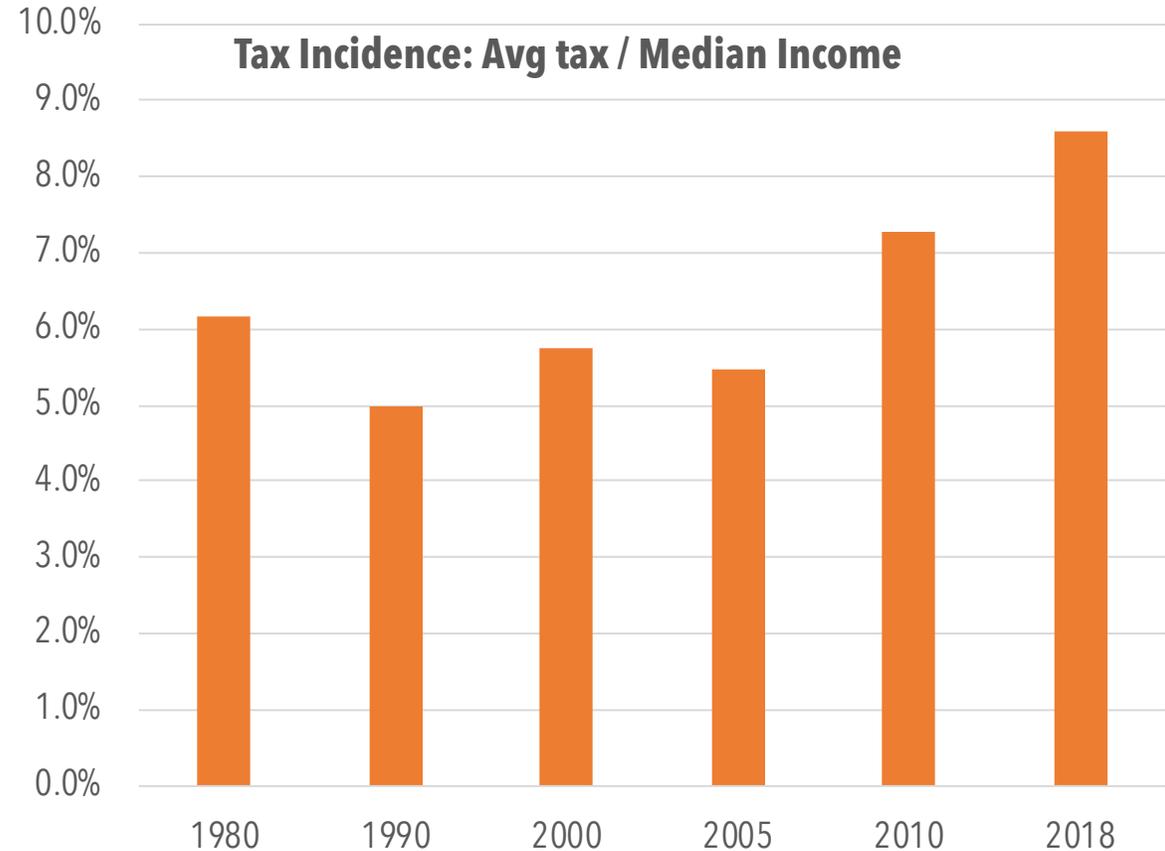
- Average tax somewhat higher than projected \$14,701 vs \$14,568
- Town budget expenditures slightly higher \$31,100,000 vs \$30,692,000
- Debt service (CPS, CCHS and town) higher \$2.7 million vs \$1.8 million (higher cost school projects)
- Cost per pupil CPS \$ 15,370 for 2010 to \$ 18,016 for 2017 with declining enrollment – 17.2% increase (w/o debt)
- Cost per pupil at CCHS \$ 18,872 for 2010 to \$ 25,844 for 2017 with stable enrollment – 36.9% increase (w/debt)

WHERE WE EXPECTED TO BE

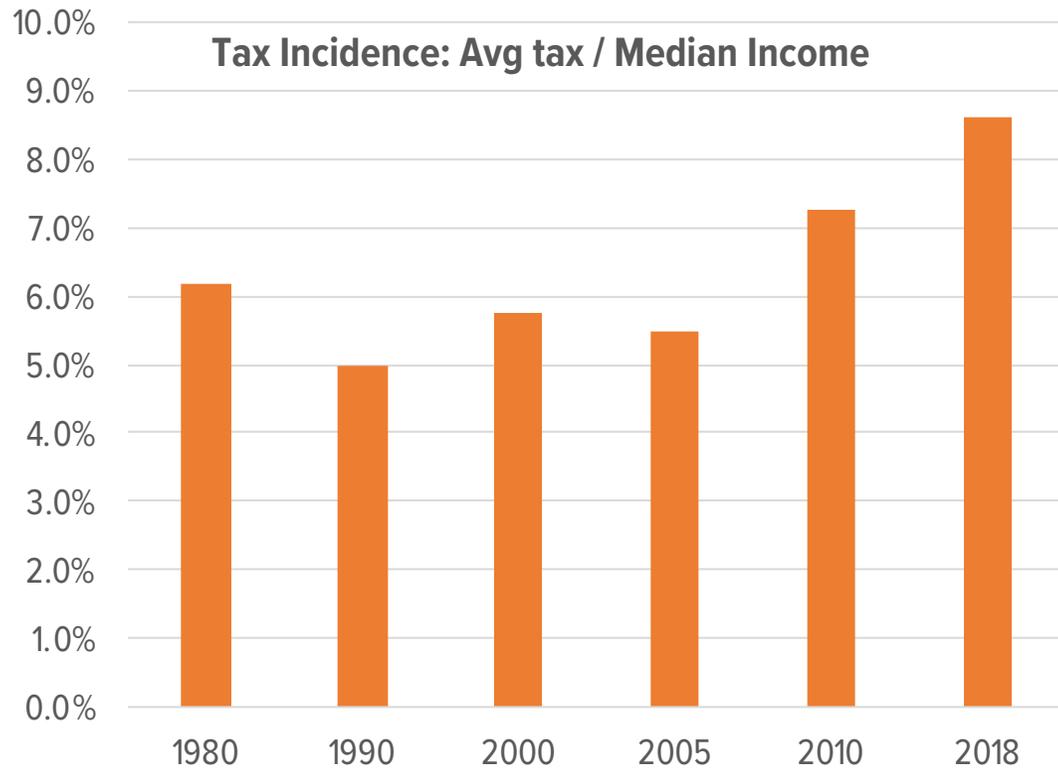
Tax incidence over time - what percent we pay:

Your actual tax depends on house value and income

Carlisle	<u>1980</u>	<u>1990</u>	<u>2000</u>	<u>2005</u>	<u>2010</u>	<u>2018</u>
Residents	3306	4333	4717	5509	5577	5248
Households units	1055	1495	1655	1685	1,758	1830
Average Tax	2,360	4,320	7,468	8,770	11,276	14,701
Median family income	38,250	86,660	129,800	160,000	155,000	170,703
Tax incidence	6.2%	5.0%	5.8%	5.5%	7.3%	8.6%



Our Budgets and Our Taxes



- Household incomes:
 - minus state and Federal taxes
- Town budget drivers / expenses
- Other revenue sources
- Balancing our needs and costs
- Future investments

Needs, Issues and Challenges

2030 and...
2040

- Aging
- School enrollment
- Taxes / budget
- Life cycles



- **Population growth**
- **Age cohorts**
- **Housing costs / price**
- **School enrollment**
- **Shifting needs**
- **Paying for it**

OUR CARLISLE MASTER PLAN

Appendix – raw data

Home sale and net children in turnover and new home sales

Home sales and children flowing into CPS

Rates of Growth (inflows pre-school and CPS)							
2017	Turnover	92 homes	Change	Rate	Combined Inflow /sales		
Sept - Aug y	pre-school	24-9	15	0.16			
	K-8	<u>27-10</u>	<u>17</u>	<u>0.18</u>	PreSchool	15+0	15
	Total	51-19	32	0.35	K-8	17+1	18
	New	9 homes	Change	Rate		Total	33
	pre-school			0.00			
	K-8		<u>1</u>	<u>0.11</u>	Rate		0.33
	Total		1	0.11		33/101	
	Total	101 homes	33 kids				
2016	Turnover	79 homes	Change	Rate	Combined Inflow		
Sept - Aug y	pre-school	14-3	11	0.14			
	K-8	<u>17-10</u>	<u>7</u>	<u>0.09</u>	PreSchool	11+2	13
	Total	31-13	18	0.23	K-8	7+5	12
	New	11 homes	Change	Rate		Total	25
	pre-school		2	0.18			
	K-8		<u>5</u>	<u>0.45</u>	Rate		0.28
	Total		7	0.64		25/90	
	Total	61 homes	23 kids				
2015	Turnover	52 homes	Change	Rate	Combined Inflow		
Sept - Aug y	pre-school	27-0	27	0.52			
	K-8	<u>18-16</u>	<u>2</u>	<u>0.04</u>	PreSchool	27+7	34
	Total	30-13	29	0.56	K-8	2+6	8
	New	10 homes	Change	Rate		Total	42
	pre-school		7	0.70			
	K-8		<u>6</u>	<u>0.60</u>	Rate		0.68
	Total		13	1.30		42/62	
	Total	62 homes	23 kids				

- Carlisle Demographics **9/1/2016 - 8/31/2017** :
- ===== **Total of 101 sales** =====
- 92 were turnovers
- 9 were new homes
- 6 of sellers moved within town and have 9 children
- - the children are not counted in any statistics below
- - 1 moved to new houses, 5 were involved in turnovers
- 19 of sellers of turnovers have 27 children (excluding moves within town)
- 30 of buyers of turnovers have 54 children (excluding moves within town)
- 1 of buyers of new homes has 1 child (excluding moves within town)
- Distribution of children in bought houses (excluding moves within town):
- =====
- 24 preK (0 in new homes, 24 in turnovers)
- 28 K-8 (1 in new homes, 27 in turnovers)
- - some of these may be in private school, as not in Husky Handbook
- 3 HS (0 in new home, 3 in turnovers)
- - distribution between public & private HS unknow
- 55 total (including possible private schoolers)
- Distribution of children in sold houses (excluding moves within town):
- =====+=====
- 9 preK
- 10 K-8 (some of these may be in private school, as not in Husky Handbook)
- 8 HS (distribution between public & private HS unknown)
- 27 total (including possible private schoolers)
- ===== **Change in distribution:** =====
- **+15 preschool**
- **+18 K-8**
- **-05 HS**