



**CRITICAL INSIGHTS**  

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**RESEARCH FOR PRECISE PRAGMATIC DIRECTION**

# *Maine Residential Heating and Energy Survey*

## Report of Findings

Prepared for:  
American Lung Association of Maine  
Maine CDC

November 2008

Focus Groups • Surveys • Public Opinion Polling

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# Report Outline

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  - Residential Heating Overview
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  - Other Conservation Efforts and Cutbacks
- Conclusions and Recommendations
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# Introduction



# Background and Purpose

- The choices Mainers make in response to today's high energy costs can have significant health and safety implications.
  - Indeed, rising costs may limit the ability of Maine people to heat their homes adequately, resulting in cutbacks not only in fuel use, but perhaps in other critical areas, such as food and medications.
  - Additionally, both American Lung Association of Maine (“ALAM”) and Maine CDC are concerned about deteriorating indoor and outdoor air quality as we make changes in our fuel choices and change the ventilation characteristics of our homes, as these shifts can increase health risks, particularly for people with chronic lung and heart diseases.
- However, despite these potentially serious consequences, we know relatively little about how Mainers are responding in ways that can affect our health.
- In response, this survey was commissioned to address these gaps in our knowledge.
  - Moving forward, we intend for the results of this effort to inform our ongoing actions and discussions regarding Maine's current energy crisis, and to provide us with a useful foundation upon which to build a public health-oriented response to these challenges.



# Method and Approach

- A survey instrument to address the aforementioned aims of the study was developed by ALAM, in collaboration with key stakeholder groups.
- Random telephone interviews, lasting an average of 10 minutes each, were conducted on a statewide basis, with all calls being placed by the Critical Insights Information Center employing the company's computer assisted telephone interviewing (CATI) system.
- Interviewing was conducted over a two-month period, from August 27<sup>th</sup> to October 27<sup>th</sup>, 2008.
- Residential households in Maine were contacted at random from electronic RDD (Random Digit Dial) residential lists provided by Survey Sampling, Inc. for U.S. Postal Zip Codes located in the state of Maine.
- In order to be eligible for the study sample, respondents needed to be Maine residents who either own or rent their home and who have the ability to make decisions about issues such as how they heat their residence.
- Refusal rates were very limited overall (< 3%), indicating not only the high level of residents' engagement with the topic area of home heating and energy usage, but also that the sample was not tainted in any meaningful way by non-response error.



# Study Design & Sample Weighting Protocols

- The study employed a disproportionate, stratified sampling design.
- In this design, each of Maine's eight public health districts (see page 8 for composition) formed a primary sampling unit. Within each of these sampling units, the distribution of households by associated county and then Zip Code was examined and a proportional RDD probability sample was drawn from within that sampling sub-unit. Households in associated communities were then selected at random and contacted for the survey.
- Using the disproportionate stratified approach, equal numbers of interviews will be completed with households within each of the eight public health districts (a target sample size of 400 per district, see Appendix) for a total sample size of 3,204 surveys. While the disproportionate approach yields a statistically reliable sample size at the district level (+/- 4.9 percentage points, 95% confidence interval), in order to examine results at the statewide level, data was statistically weighted and balanced to correct for the unequal probability of selection by district.
- Statewide data presented in this report was weighted at the district level according to housing unit population data from the 2006 U.S. Census population estimates.



# County of Residence

In which county do you live?	Unweighted		Weighted	
	Sample Size	Percent	Sample Size	Percent
Androscoggin	224	7	265	8
Aroostook	400	13	182	6
Cumberland	400	13	611	19
Franklin	73	2	86	3
Hancock	254	8	175	5
Kennebec	269	8	275	9
Knox	113	4	109	3
Lincoln	97	3	93	3
Oxford	104	3	123	4
Penobscot	350	11	341	11
Piscataquis	51	2	50	2
Sagadahoc	97	3	93	3
Somerset	131	4	134	4
Waldo	95	3	91	3
Washington	146	5	100	3
York	400	13	476	15



# Public Health District

Public Health District	Unweighted		Weighted	
	Sample (# of respondents)	Percent	Sample (# of respondents)	Percent
District 1 (York)	400	13	476	15
District 2 (Cumberland)	400	13	611	19
District 3 (Andro., Franklin, Oxford)	401	13	475	15
District 4 (Knox, Linc., Saga., Waldo)	402	13	386	12
District 5 (Kennebec, Somer.)	400	13	409	13
District 6 (Penob., Pisca.)	401	13	391	12
District 7 (Hancock, Wash.)	400	13	275	9
District 8 (Aroostook)	400	13	182	6



# Survey Findings

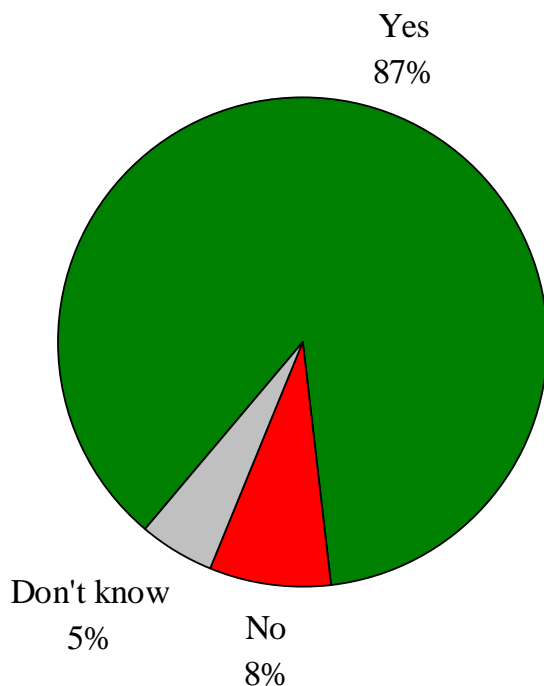


# *Adequacy of Current Home Heating*



# Perceived Adequacy of Upcoming Home Heating

*Do you anticipate being able to adequately heat your home this winter?*

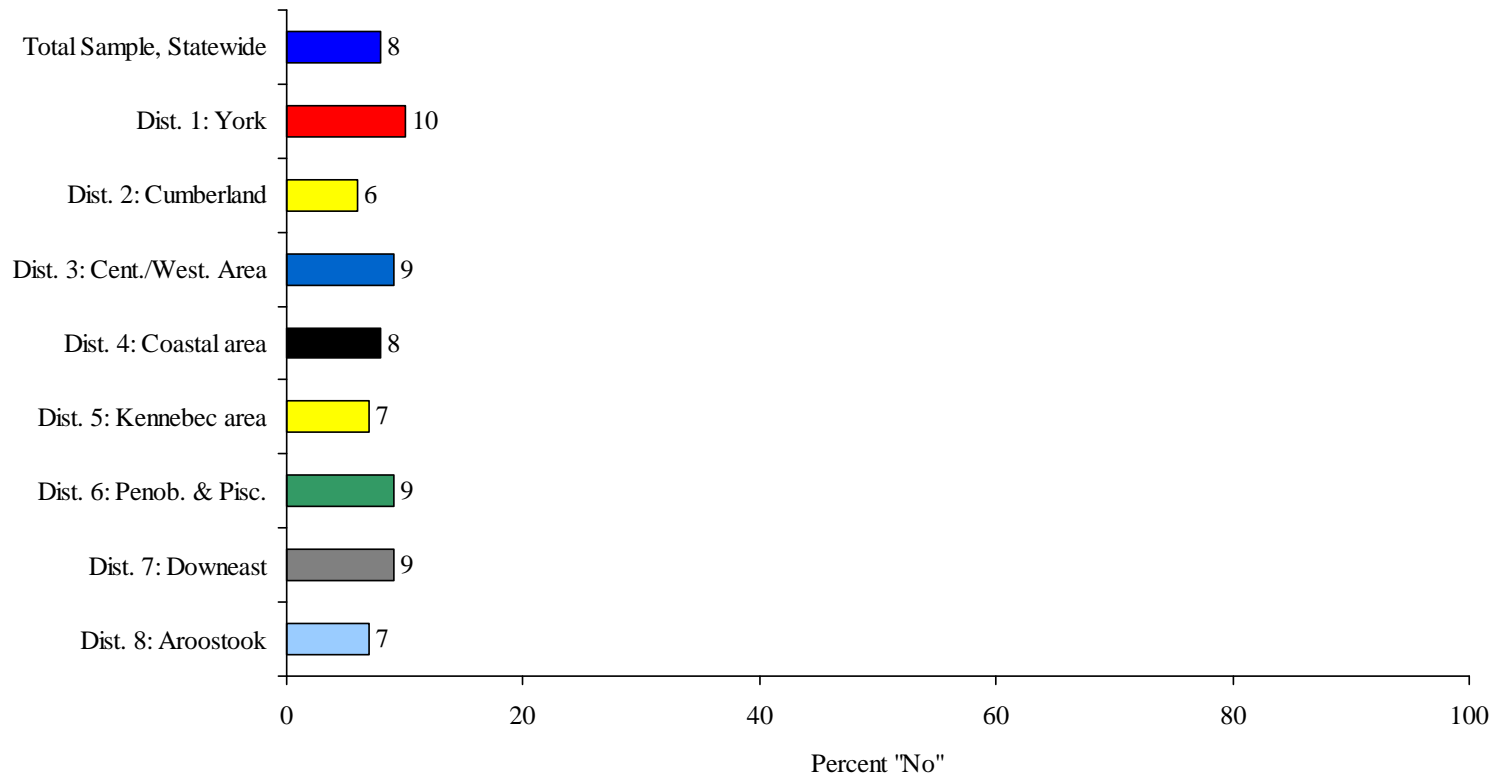


- While most Maine households believe they will be able to provide adequate heat this winter, about 1-in-10 do not.
  - Notably, these concerned households tend to be disproportionately lower-income (i.e. have a total HH income below \$35,000 a year).
  - As a result, most of these households claim to be making household or personal cutbacks as a result of energy prices.



# Perceptions of Adequacy of Home Heating, By Public Health District

*Do you anticipate being able to adequately heat your home this winter?*

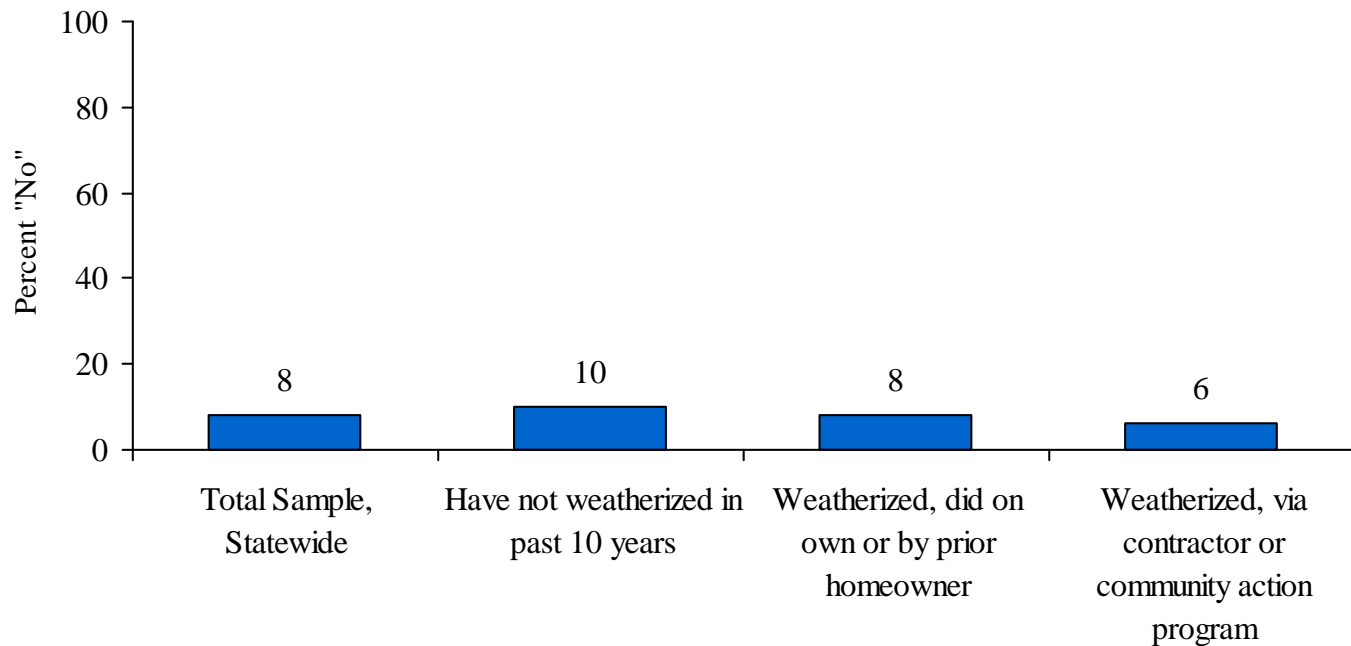




# Perceptions of Adequacy of Home Heating, By Home Weatherization Status

*Do you anticipate being able to adequately heat your home this winter?*

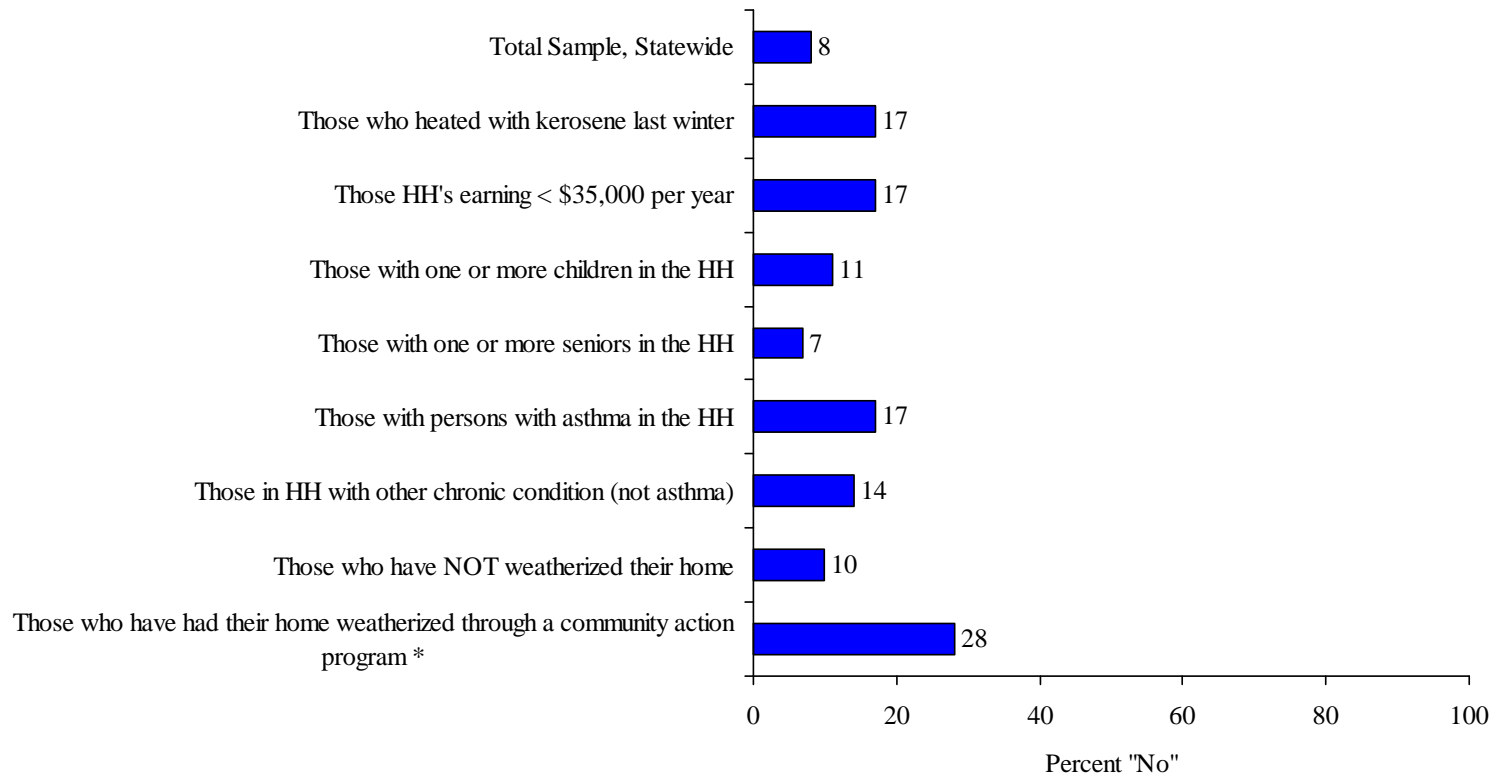
- Directionally, those Maine residents who have not weatherized their homes in the past ten years are more concerned about heating their homes this winter than are those who have had a home weatherization, either done themselves or by a contractor.





# Concerns About Adequacy of Home Heating, Among Key Subgroups

*Do you anticipate being able to adequately heat your home this winter?*

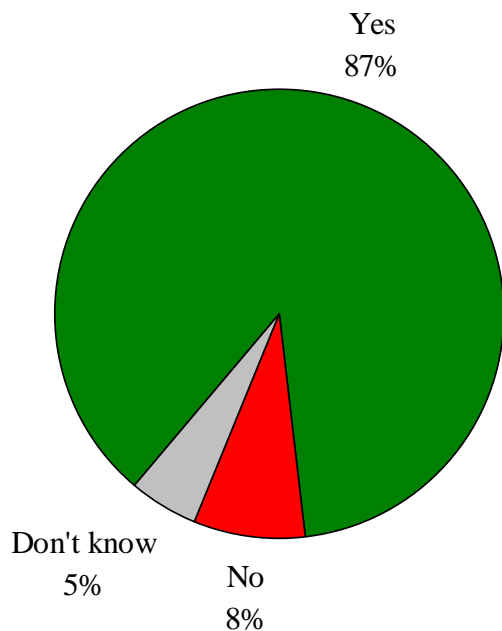


\* Interpret results with caution due to small base size; total sample of those weatherizing via this type of program totals just 3% of all weatherizations (n=67 respondents).



# Perceptions of Adequacy of Home Heating, by Common Types of Fuel Used Last Year

*Do you anticipate being able to adequately heat your home this winter?*



Do you anticipate being able to adequately heat your home this winter?	Common Types of Heating Fuel				
	Total	Oil	Gas/ Prop.	Wood	K1
Yes	87%	86%	90%	95%	74%
No	8	9	6	4	17
Don't know	5	5	5	1	9

- Of the Maine households who feel they will not be able to provide adequate heat this winter, a disproportionate number heated with K1/Kerosene.

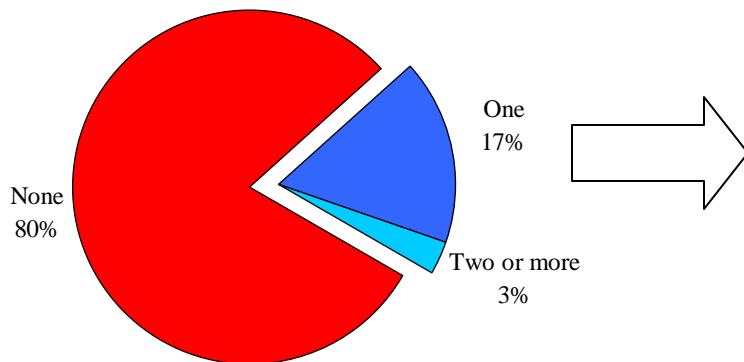


***Asthma & Other Chronic Conditions***  
***and Home Energy Considerations***

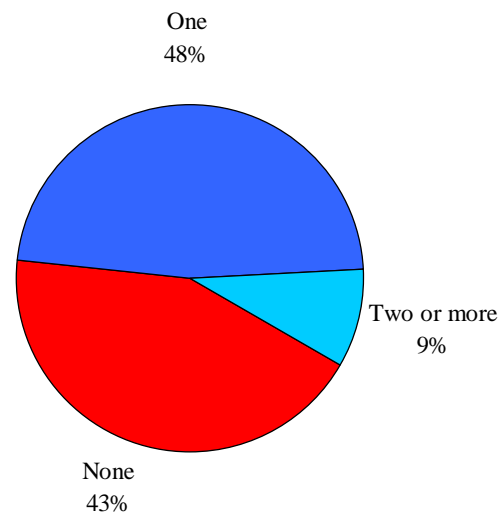


# Prevalence of Asthma

*How many people who live in your household currently have asthma?*



*How many of these people are children under age 18? \**

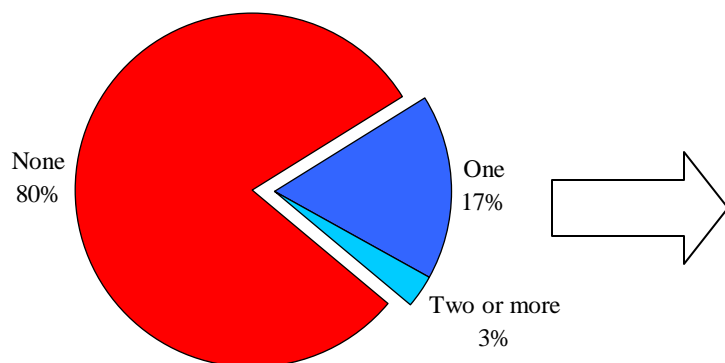


\* Based on respondents who indicated having household residents under age 18 and who also indicated having a household resident with asthma.



# Prevalence of Asthma

*How many people who live in your household currently have asthma?*

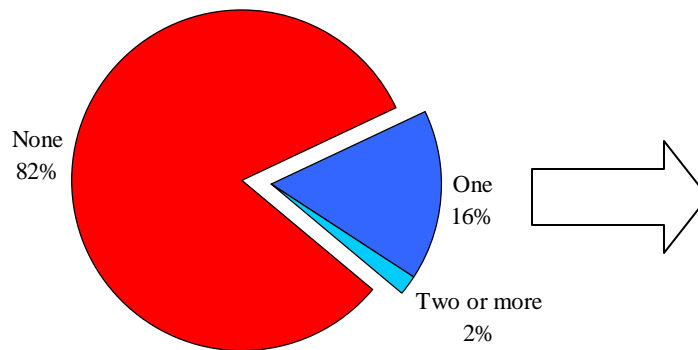


- Notably, the prevalence of having someone in the household with asthma is significantly higher among those who are concerned that they may not be able to adequately heat their homes this winter, as well as among those households where cutbacks are being made because of energy costs.
  - Among these households where there is someone with asthma, a strong majority of homes heated with wood also have a child under age 18 in the household who has asthma.
  - Incidence of having a child with asthma in the home is significantly higher among lower-income households.

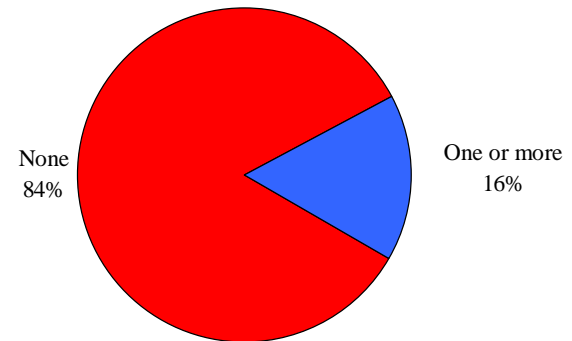


# Prevalence of Other Chronic Conditions

*How many people who live in your household currently have a chronic lung or heart condition, other than asthma?*



*How many of these people are children under age 18? \**

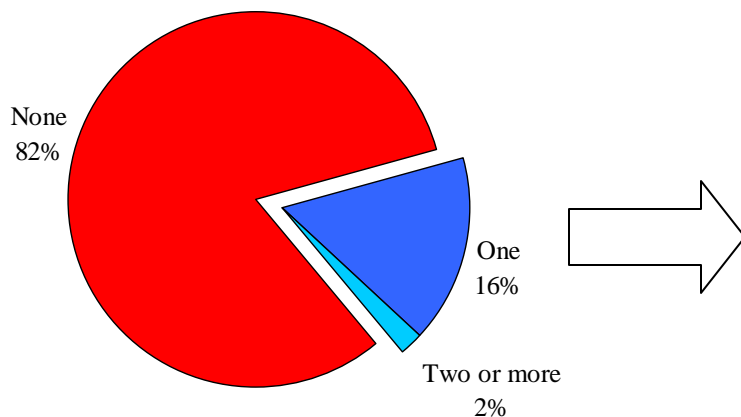


\* Based on respondents who indicated having household residents under age 18 and who also indicated having a household resident with asthma.



# Prevalence of Other Chronic Conditions

*How many people who live in your household currently have a chronic lung or heart condition, other than asthma?*

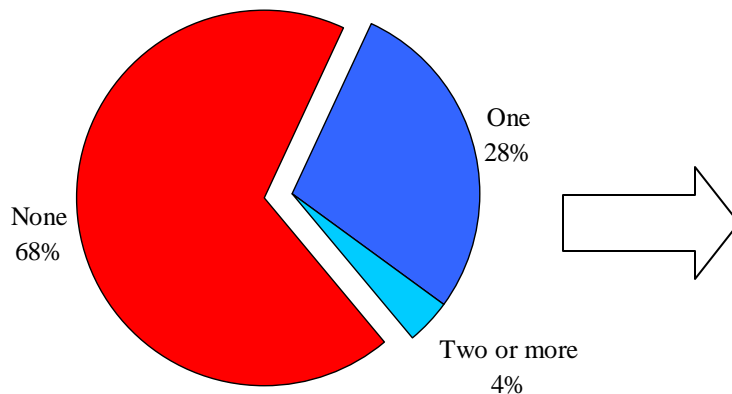


- As with asthma, prevalence of someone in the household having another type of chronic lung or heart condition is also significantly greater among those who are concerned that they may not be able to adequately heat their homes this winter.
  - Among these households where there is someone with a chronic cardio-pulmonary condition, a strong majority have an older resident.



# Total Prevalence of Asthma or Other Chronic Conditions

*How many people who live in your household currently have asthma or a chronic lung or heart condition, other than asthma?*

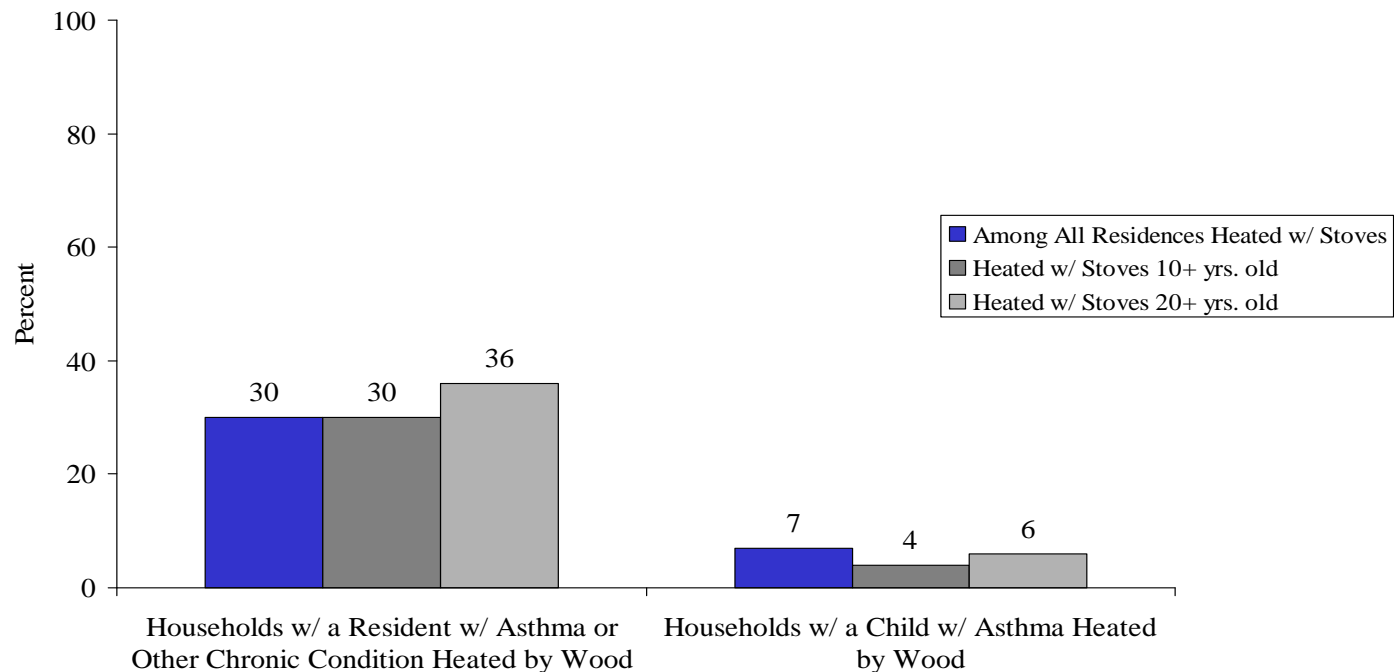


- Roughly one in every three Maine households surveyed has a resident (of any age) who suffers from either asthma or some other chronic lung or heart condition.
- Again, households where someone has asthma or some other related condition is significantly higher among those who are concerned that they may not be able to adequately heat their homes this winter and who will be making cutbacks as a result, as well as among those who heat their homes with K1/Kerosene.



# Wood Stove Usage in Maine Households with Residents with Asthma/Other Chronic Conditions

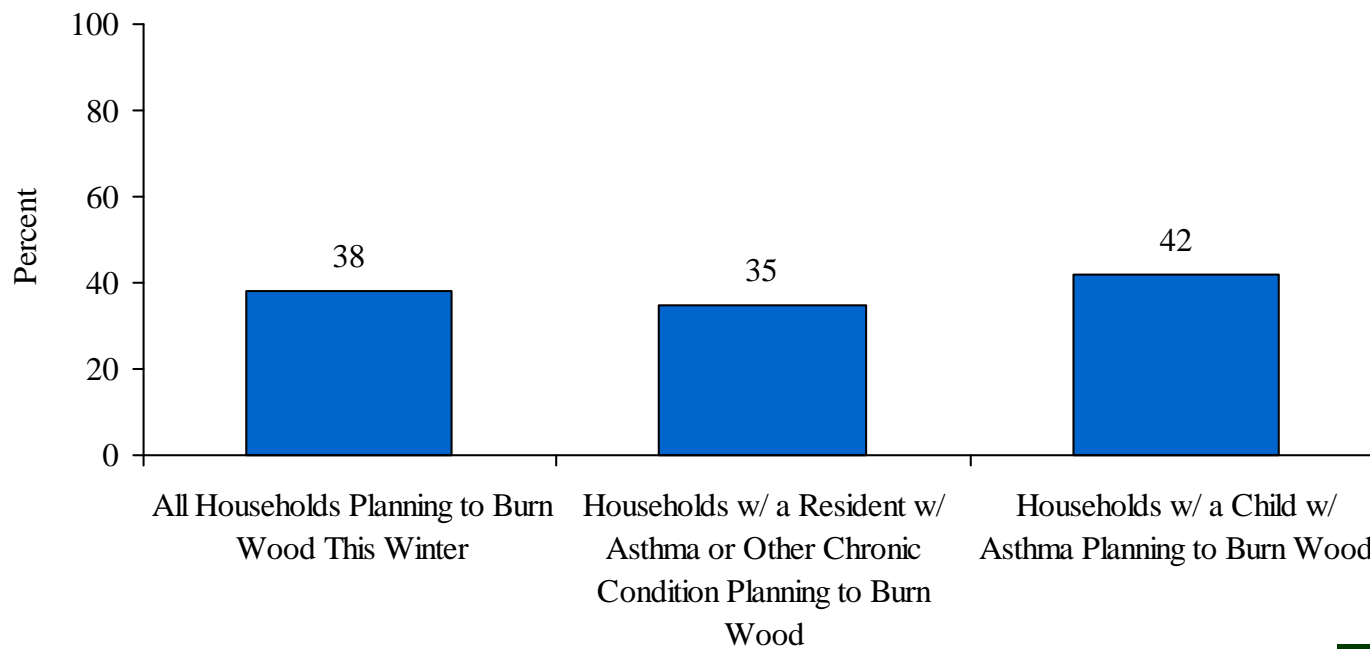
- In examining households heated with wood stoves, when compared to those heated with newer stoves, a slightly greater proportion of stoves 20 years or older are being used in homes with a resident who has asthma or some other chronic condition.





# Plans to Burn Wood in Maine Households with Residents with Asthma/Other Chronic Conditions

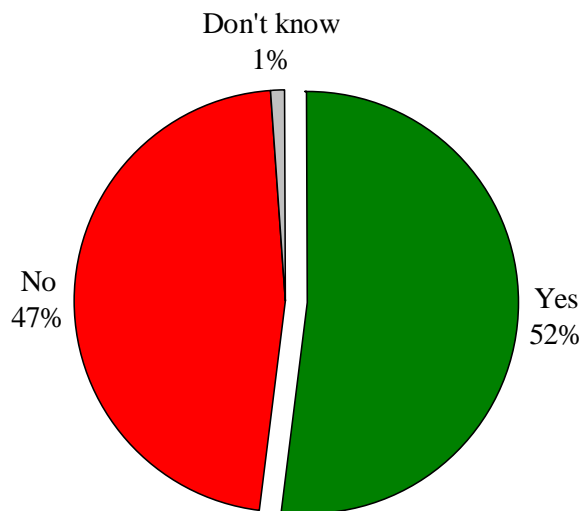
- Overall, close to four-in-ten Maine households indicate that they plan to burn wood this winter for heat.
- This proportion is similar among those households with any resident who has asthma or some other chronic lung/heart condition and slightly higher in household where there is a child who suffers from asthma.



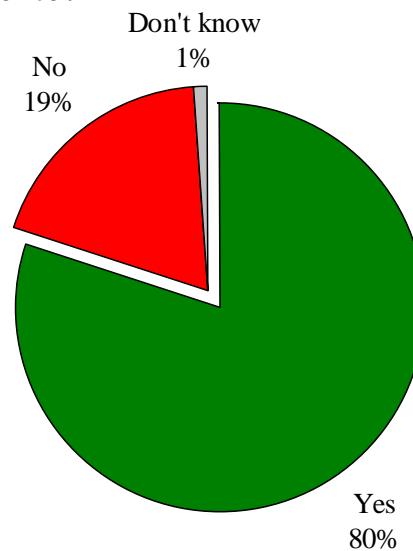


# Presence/Placement of CO Monitor

*Do you have a carbon monoxide detector in your home?*



*Is at least one detector located near the sleeping area of your home? \**



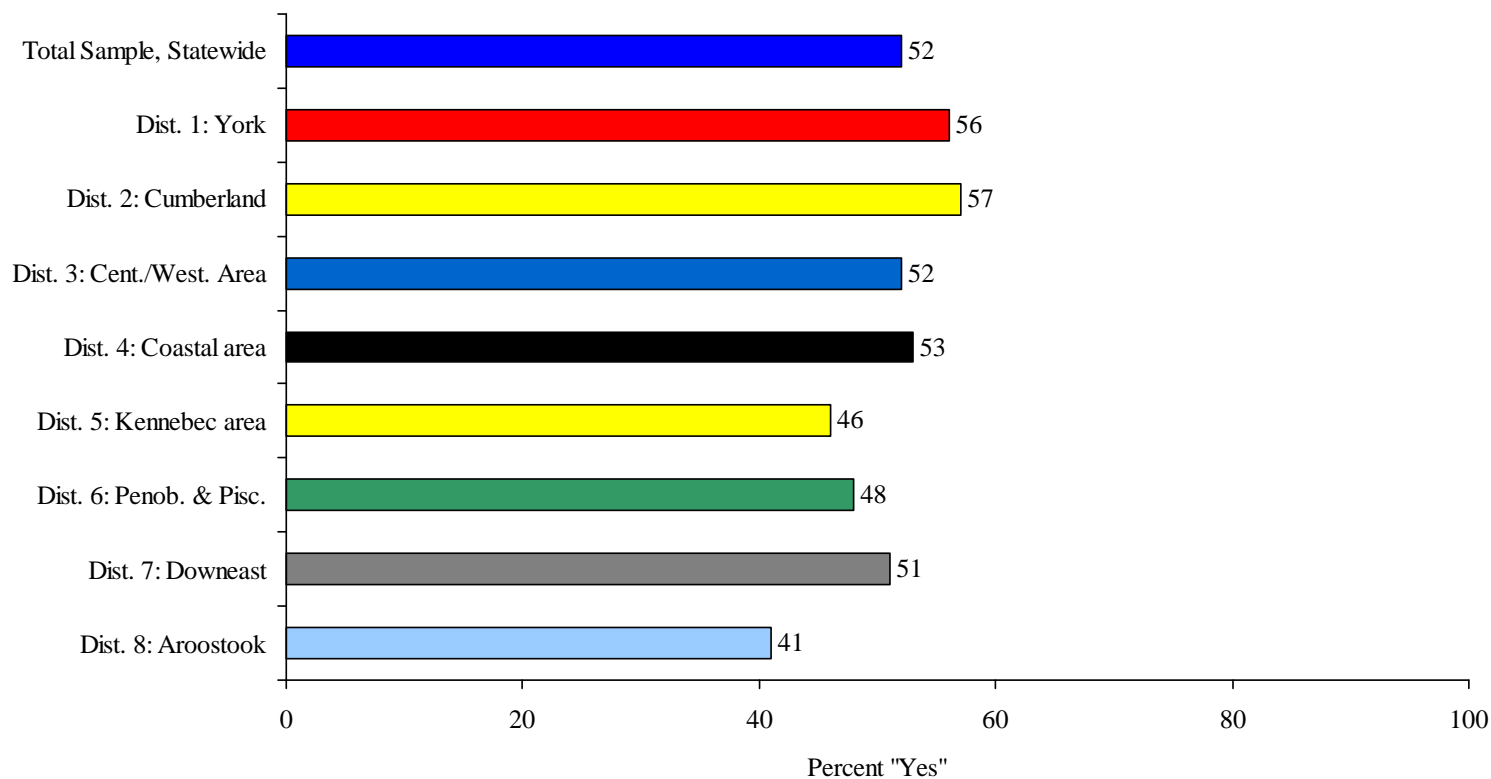
\* Based on respondents who have a CO detector.

- CO monitors are most common in southern Maine (PHD #1 and #2), as well in homes principally heated with gas/propane.



# Presence of CO Monitor, By Public Health District

*Do you have a carbon monoxide detector in your home?*



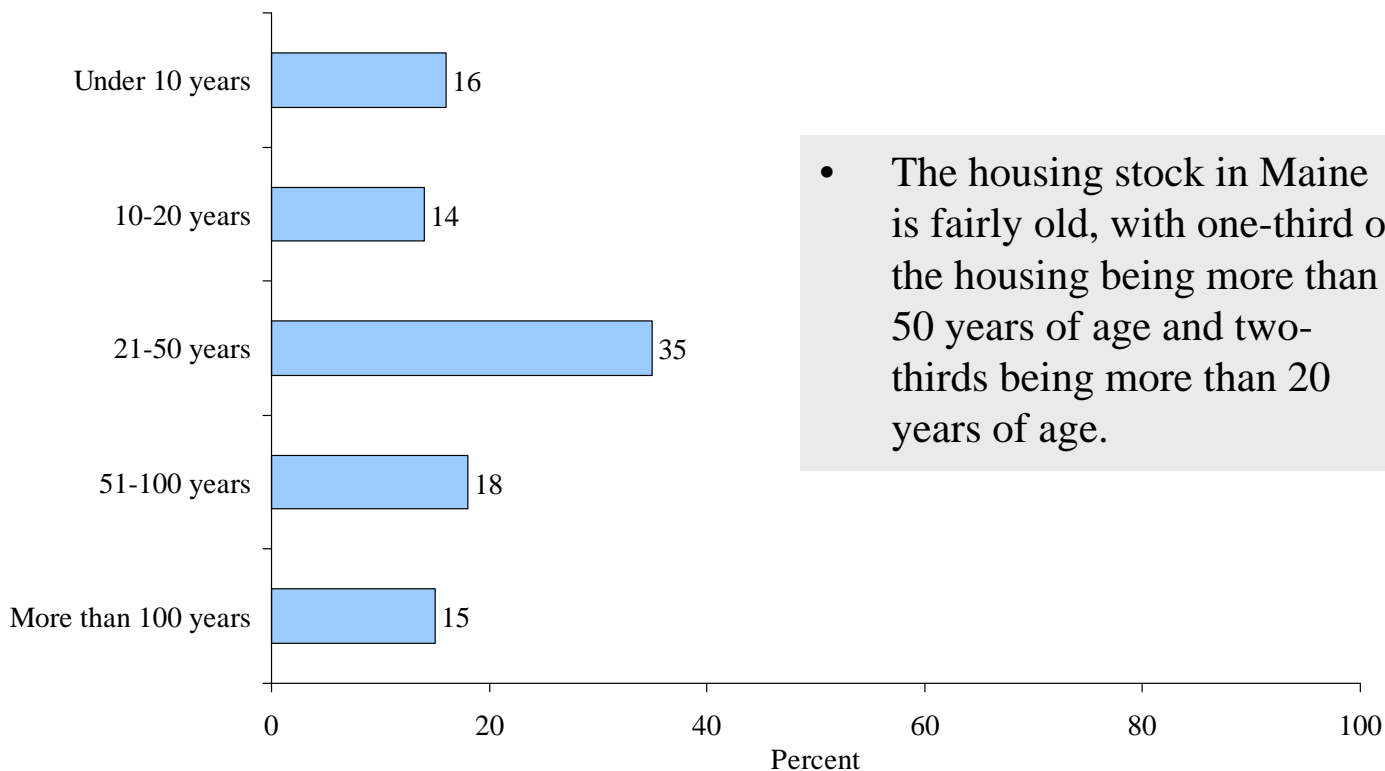


# *Residential Heating Overview*



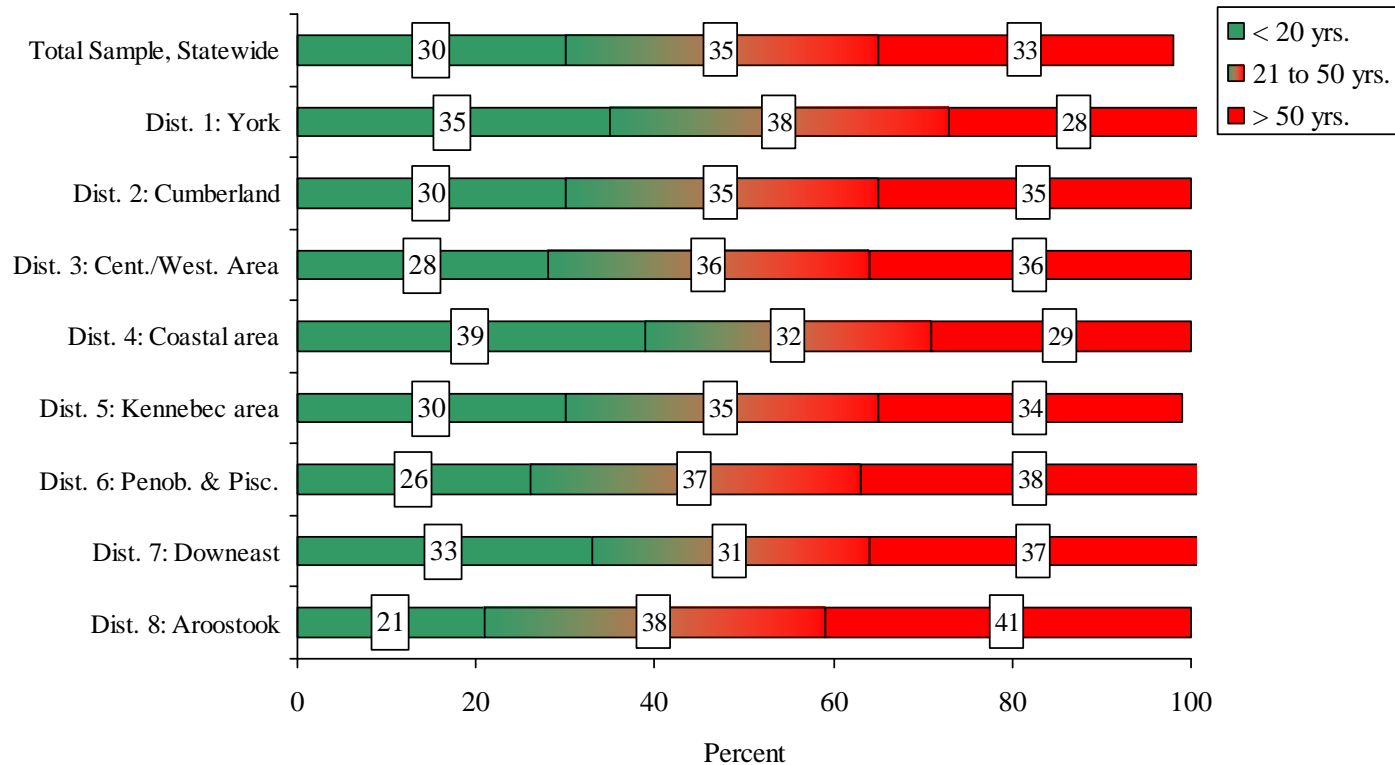
# Age of Housing Stock in Maine

*In what year, approximately, was your home originally built? Converted to age*





# Age of Housing Stock in Maine, By Public Health District

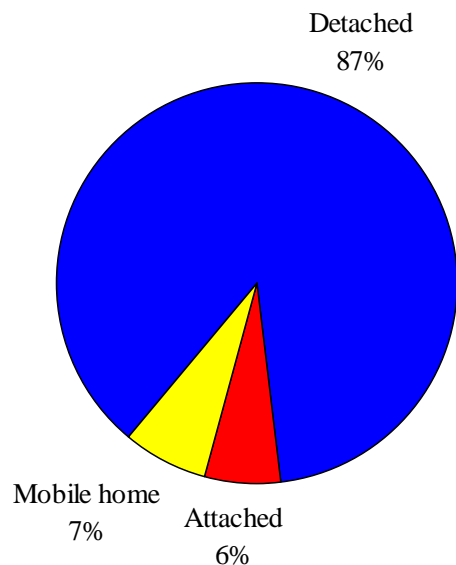


- The average age of a Maine residence tended to be older in PHD #8.



# Type and Age of Residence

*Which of the following best describes your home?*



In what year, approximately, was your home <u>originally built</u> ?	Total	Type of Home		
		De-tached	At-tached	Mob.
Age of Residence	Total	De-tached	At-tached	Mob.
< 10 years	16%	15%	23%	22%
10 to 20 years	14	14	8	29
21 to 50 years	35	35	26	47
51 to 100 years	18	20	18	^
> 100 years	15	16	24	^
Don't know	^	^	^	1

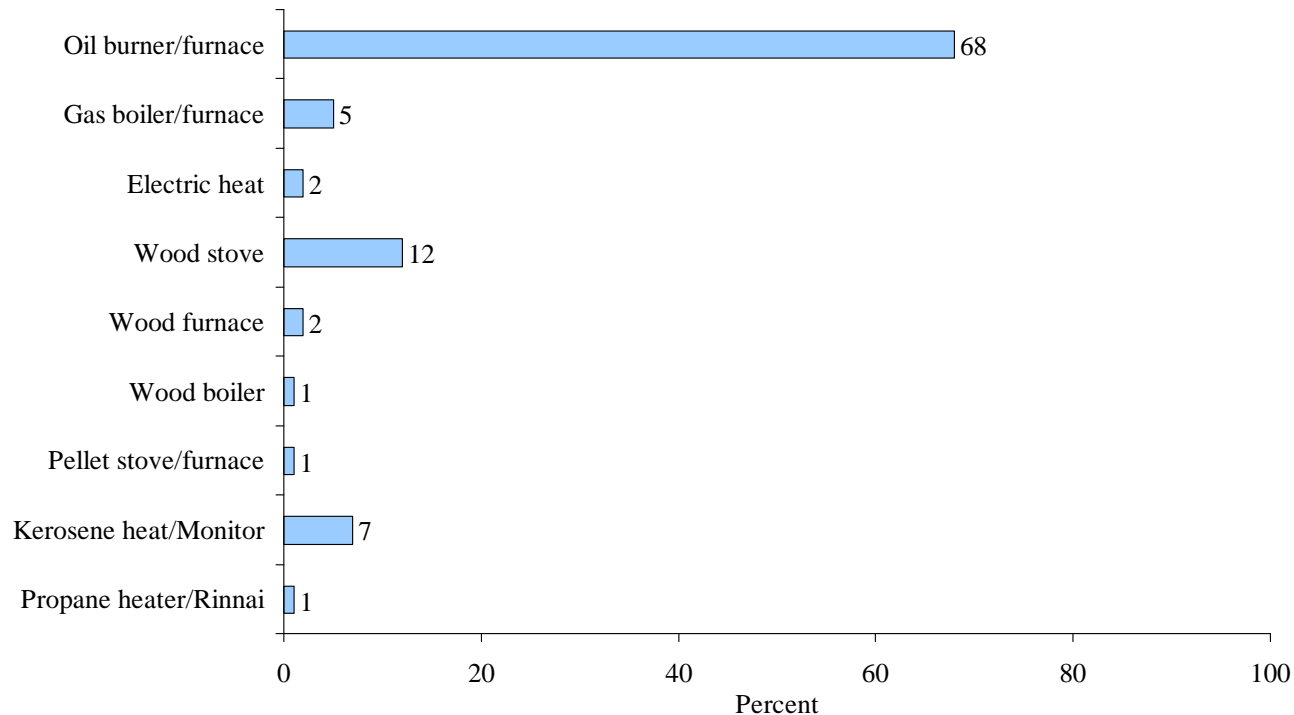
^ Denotes less than 1%.

- Incidence of attached homes is more common in southern Maine, PHD #1 and PHD #2.
- Incidence of older homes (more than 50 years old) is highest in Aroostook County (PHD #8) and Cumberland (PHD #2).



# Principal Heating System or Device Last Winter

*Please tell me the type of heating system or the device you used for your primary source of heat last winter. In other words, what did you rely on most for heating your home last season? \**

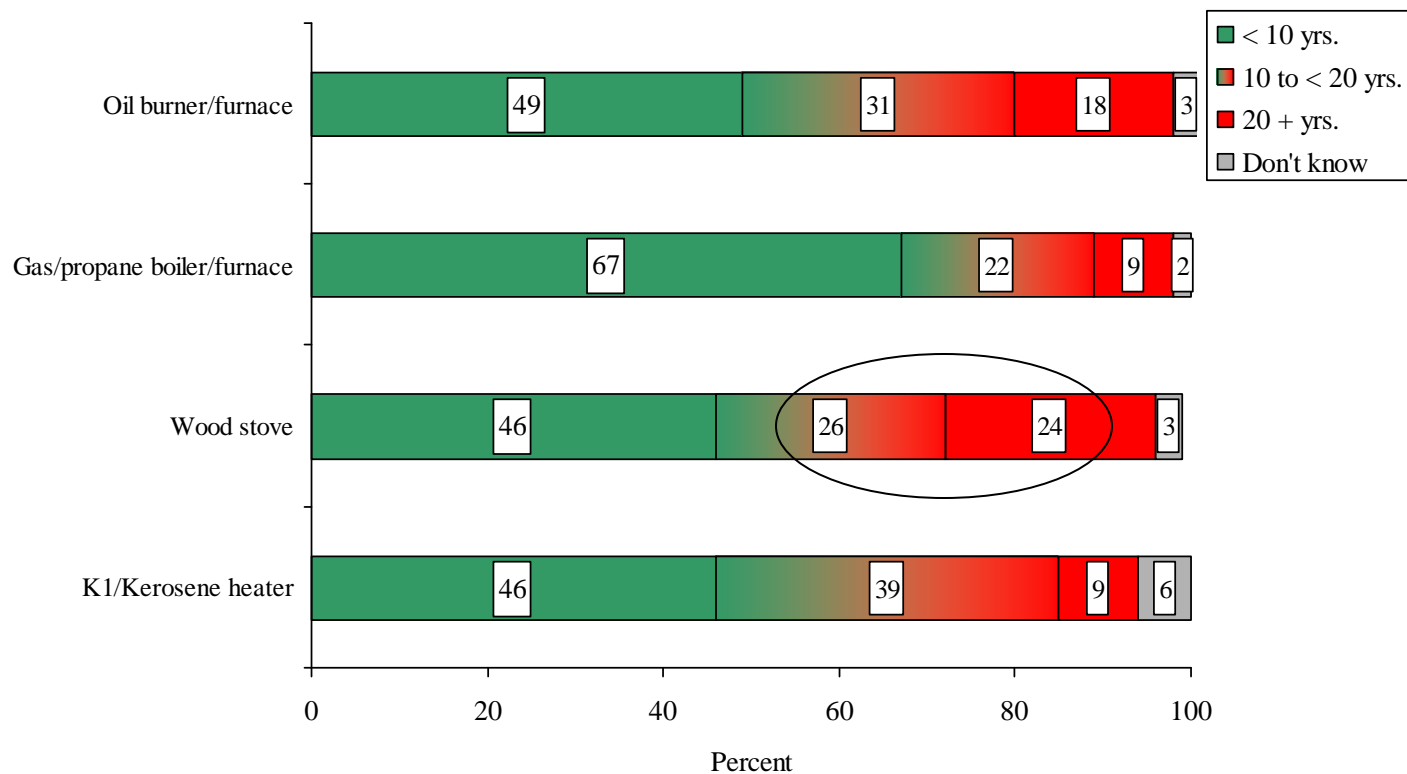


\* Top responses shown; see Summary tabulations for full accounting of responses.



# Age of Principal Heating Device, by Most Common Types of Systems

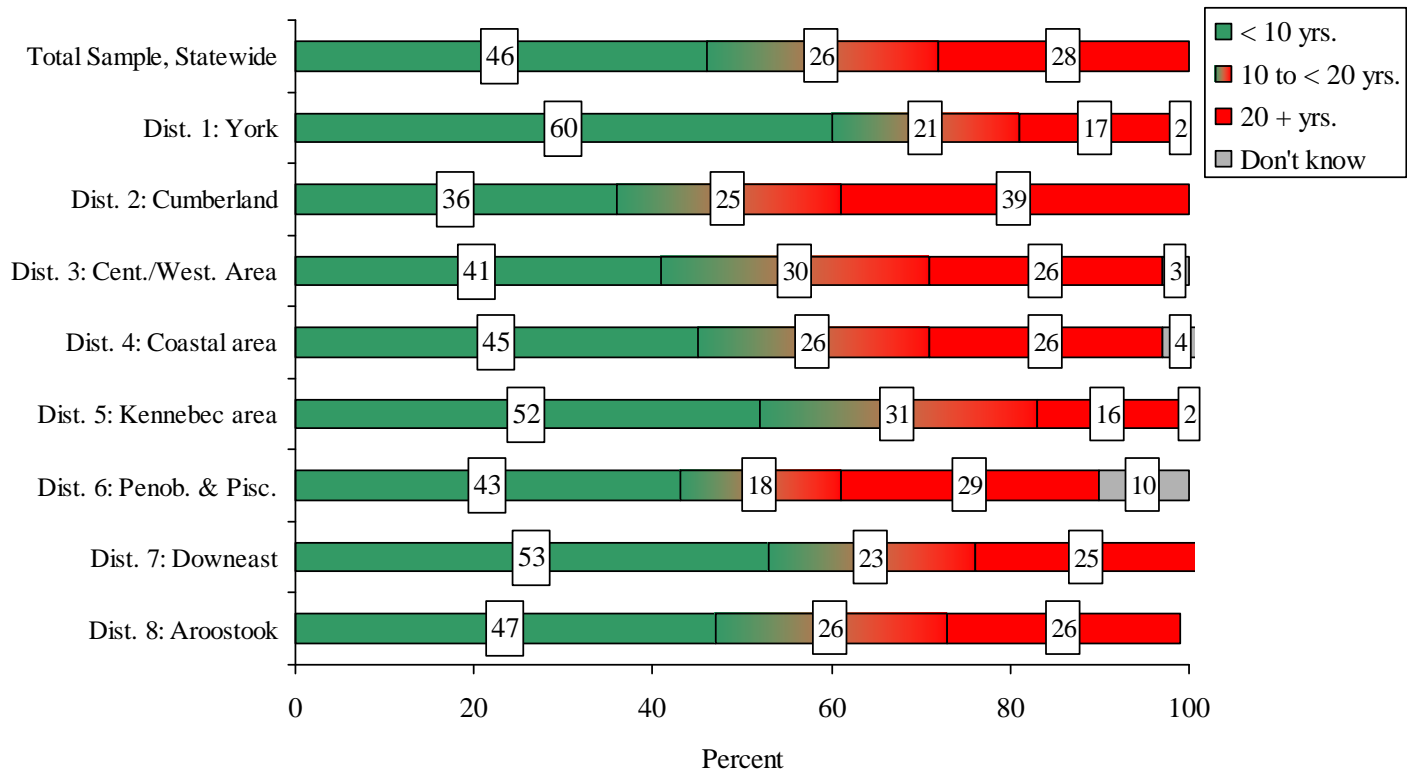
*Approximately how old is this device?*





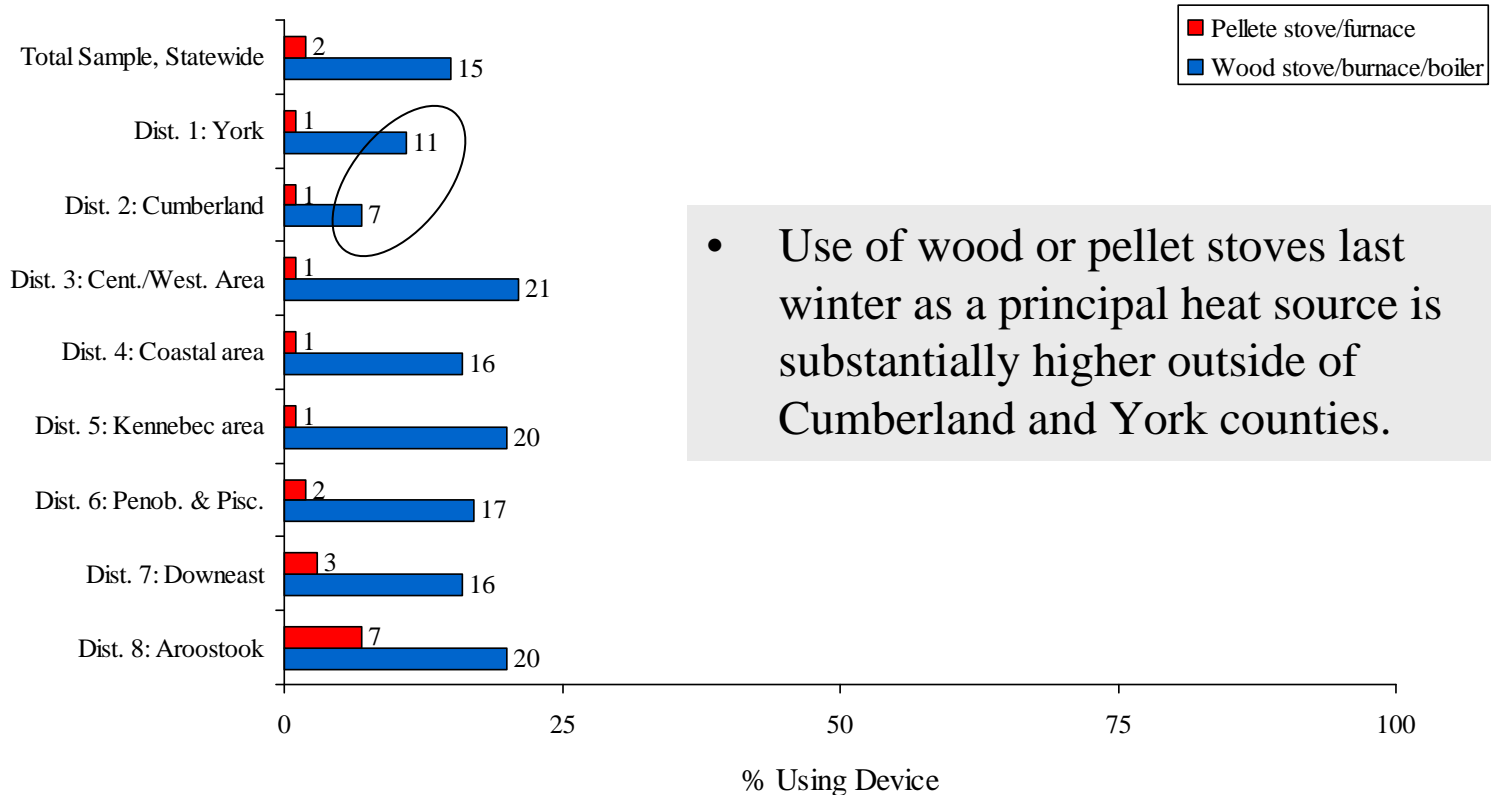
# Age of Wood Stove Used as Principal Heating Device, by Public Health District

*Approximately how old is this device?*





# Incidence of Wood or Pellet Stove/Boiler Use as Principal Heating Device, By Public Health District

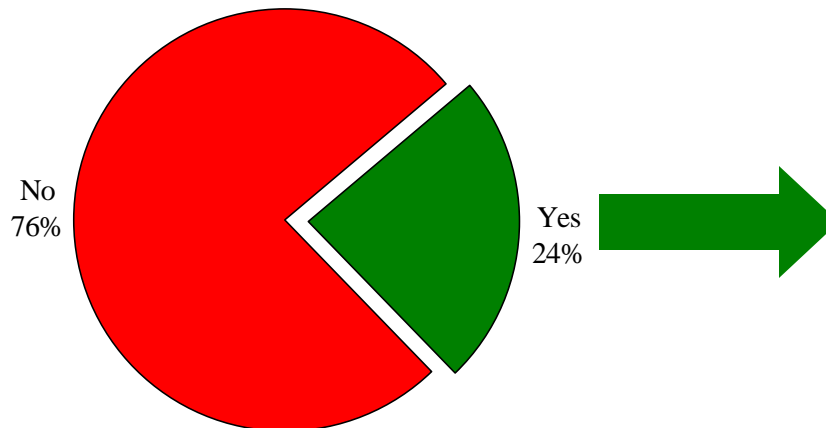


- Use of wood or pellet stoves last winter as a principal heat source is substantially higher outside of Cumberland and York counties.



# Incidence of Burning Wood or Coal for Supplemental Heat

*Last winter, did you use wood or coal as a source of supplemental heat in your home?*



What type of system or device did you use to burn wood or coal?	n=782
Wood stove	77%
Wood furnace	4
Wood boiler	2
Fireplace	11
Pellet stove	4
Coal stove/furnace	1
Other/Don't know	1

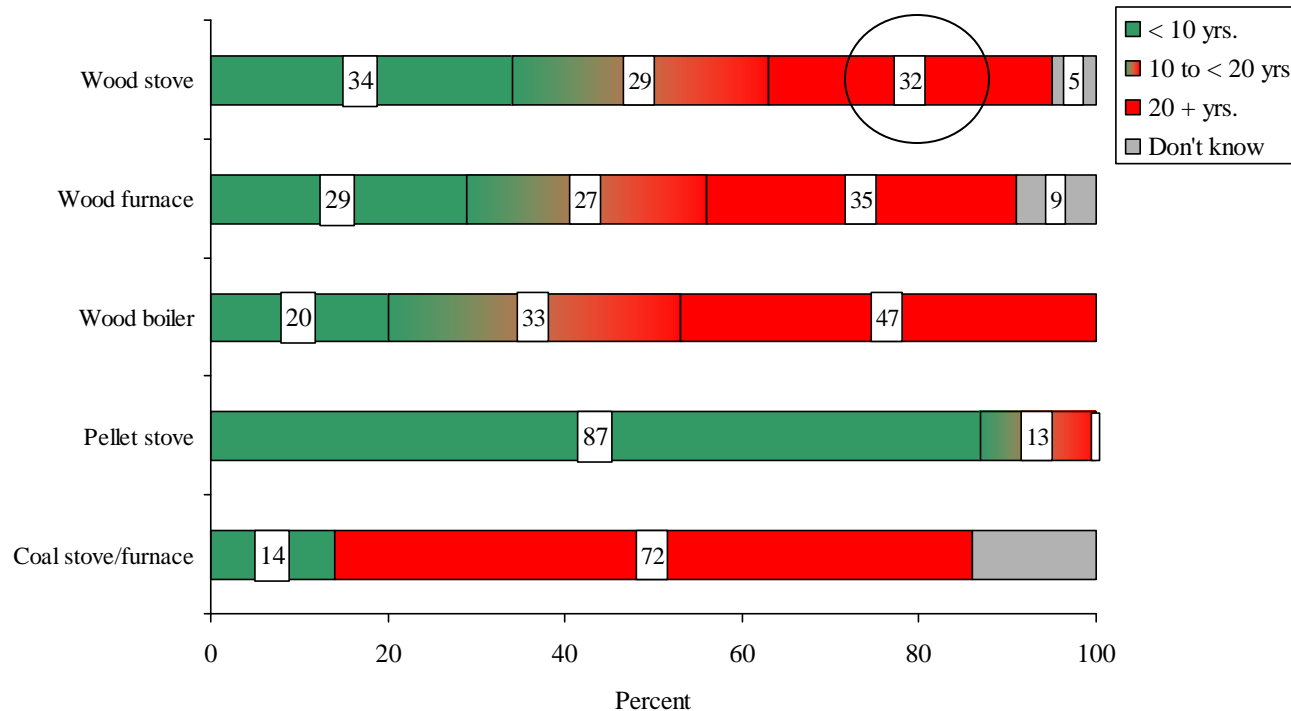
\* Based on respondents who indicated using wood or coal for supplemental heat.

- One-quarter of Maine households burned either wood or coal for supplemental heat last winter, with most using a wood stove.
  - A majority of the stoves used last winter were at least 10 years old.



# Age of Supplemental Heating Device, by Type of System

*Approximately how old is this device? \**



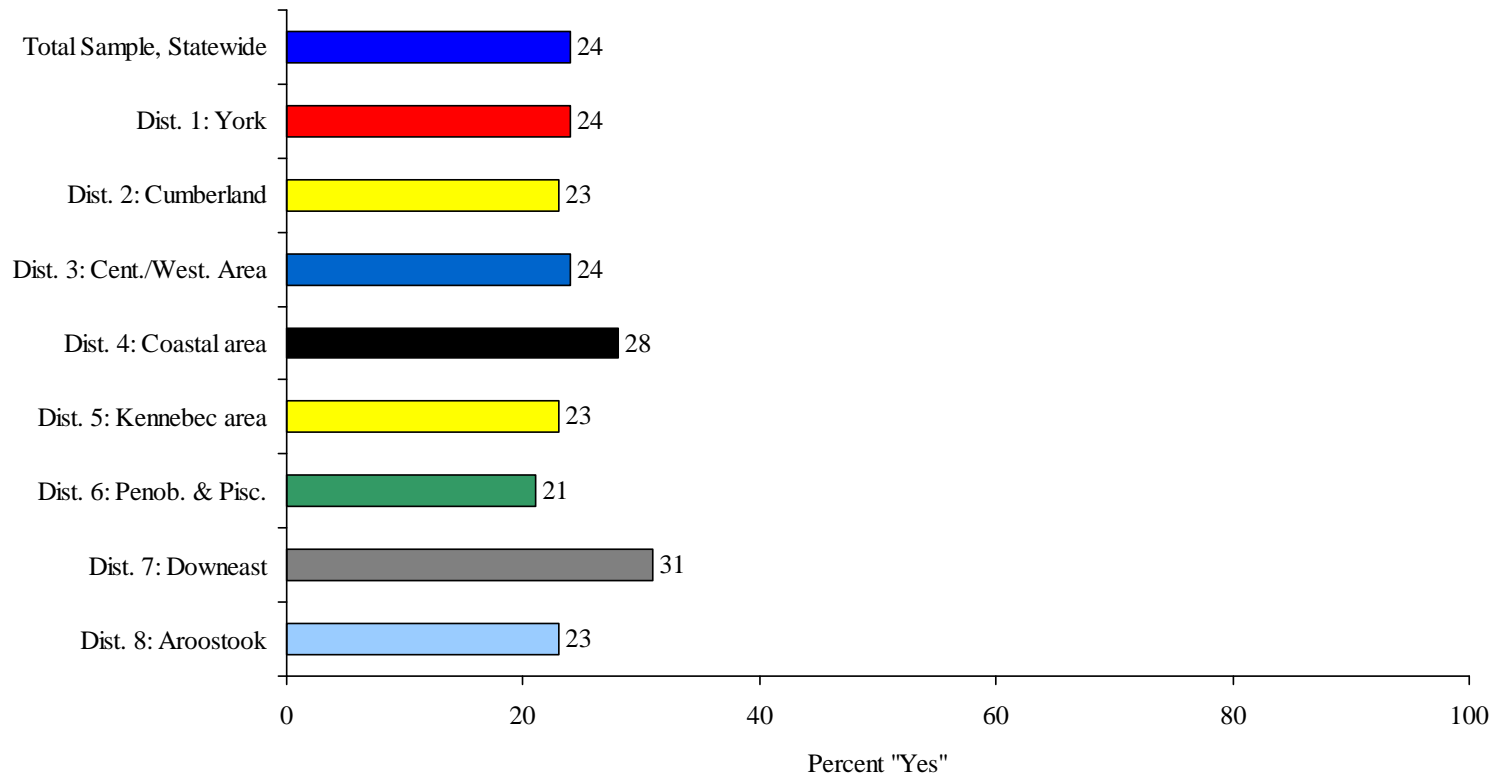
- 1/3 of supplemental wood stoves used last winter were 20 years of age, or older; the few wood furnaces and boilers in use were even older.

\* Based on respondents who indicated using wood or coal for supplemental heat.



# Incidence of Burning Wood/Coal for Suppl. Heat, By Public Health District

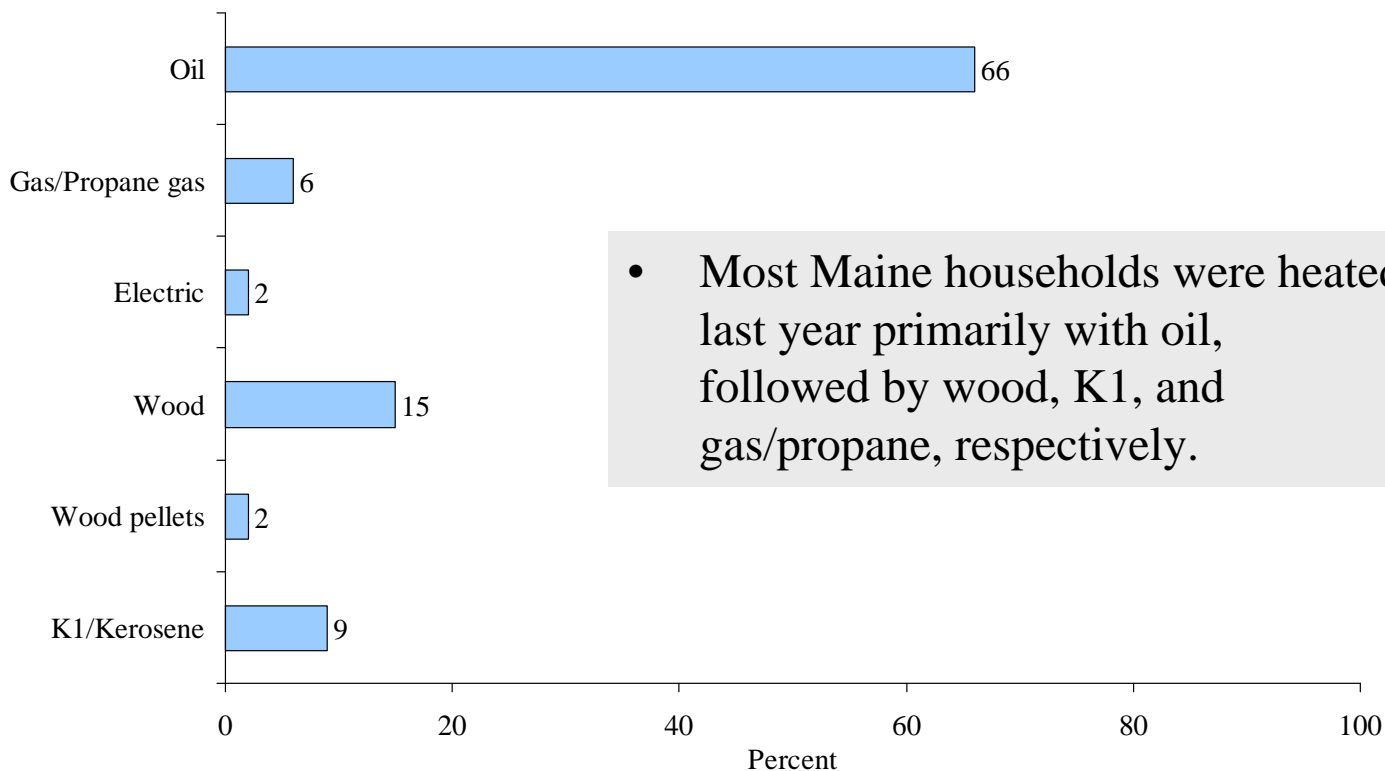
*Last winter, did you use wood or coal as a source of supplemental heat in your home?*





# Principal Heating Fuel Last Winter

*What one type of fuel was used most last winter for heating your home? \**

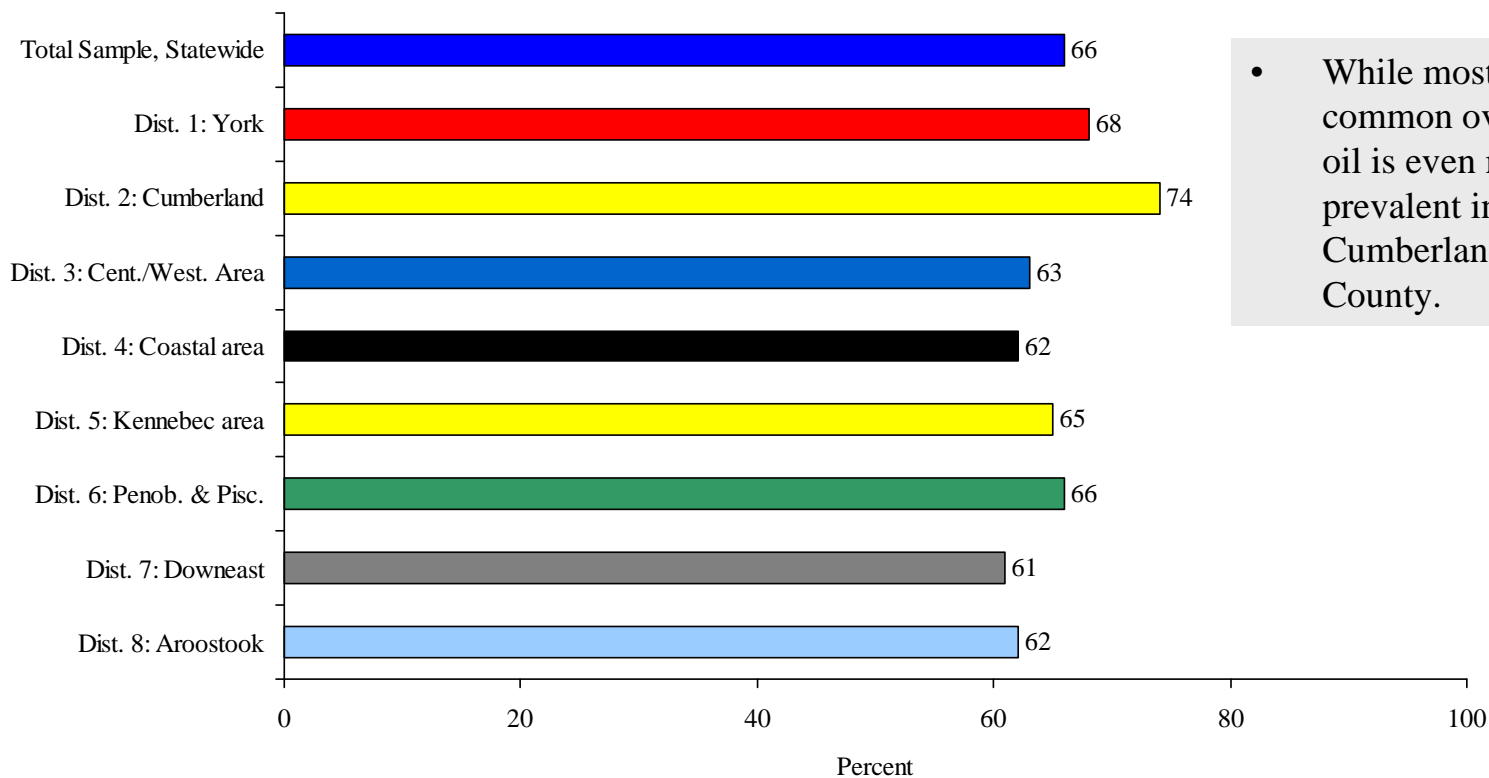


\* Top responses shown; see Summary tabulations for full accounting of responses.



# Oil Heat, By Public Health District

*What one type of fuel was used most last winter for heating your home?*

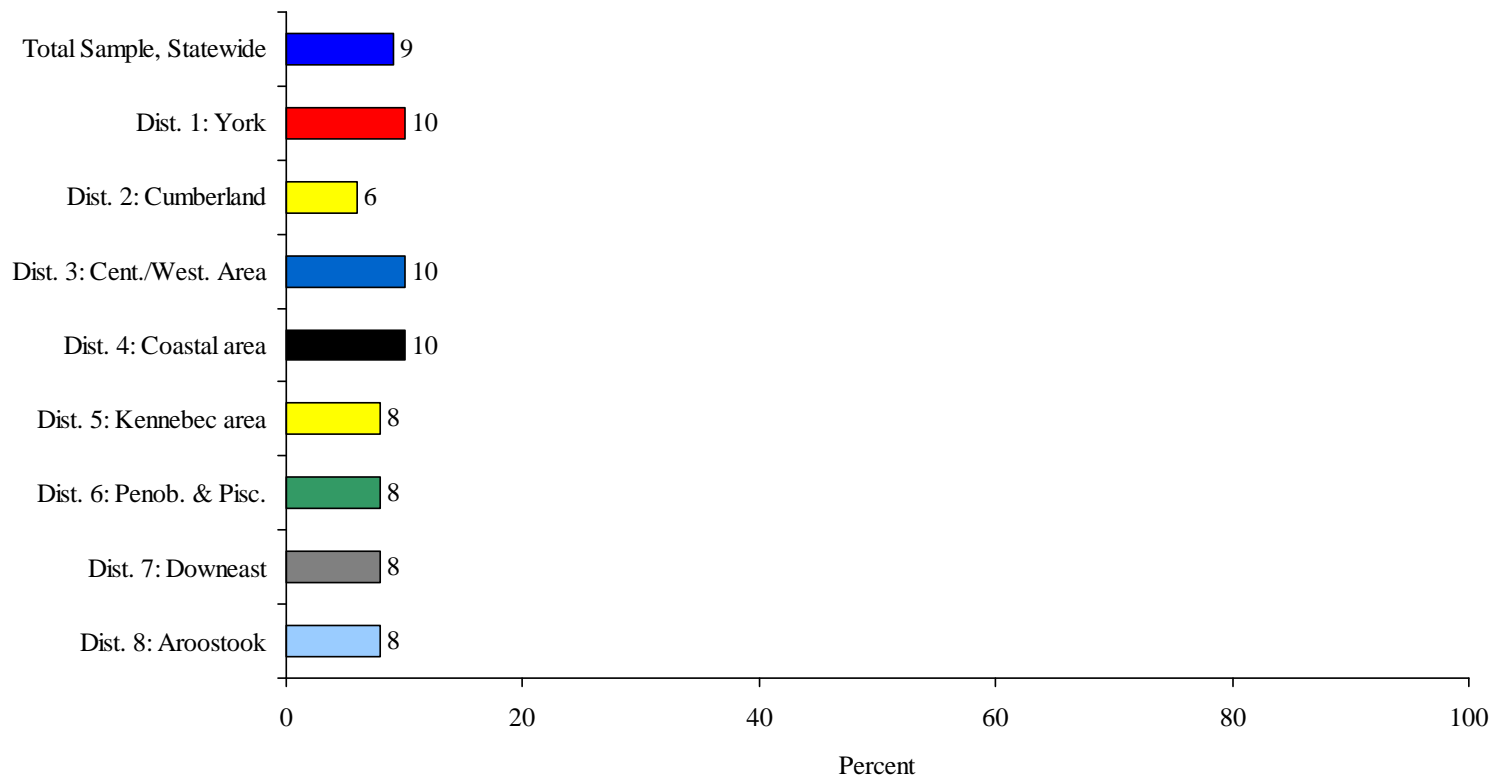


- While most common overall, oil is even more prevalent in Cumberland County.



# K1/Kerosene Heat, By Public Health District

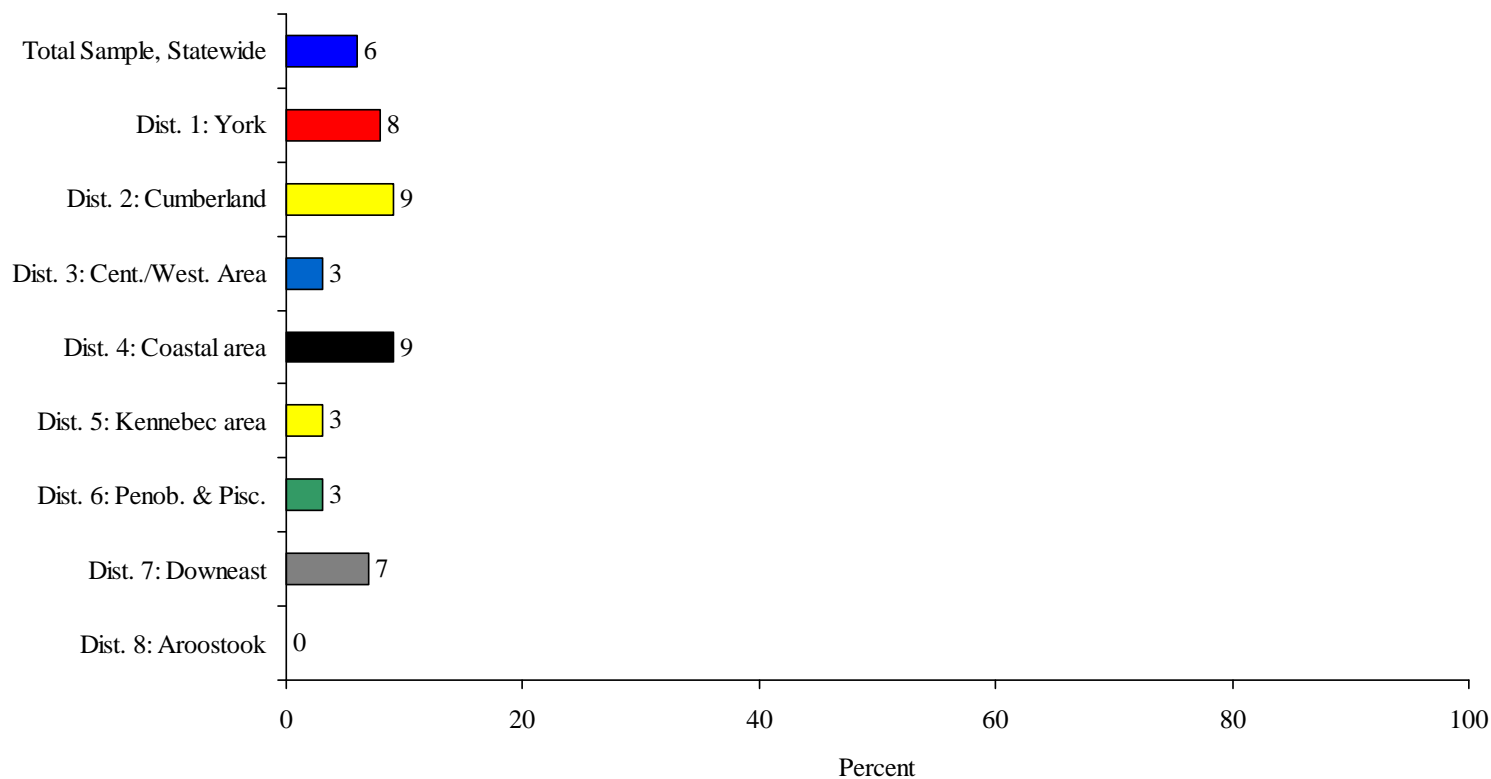
*What one type of fuel was used most last winter for heating your home?*





# Gas/Propane Heat, By Public Health District

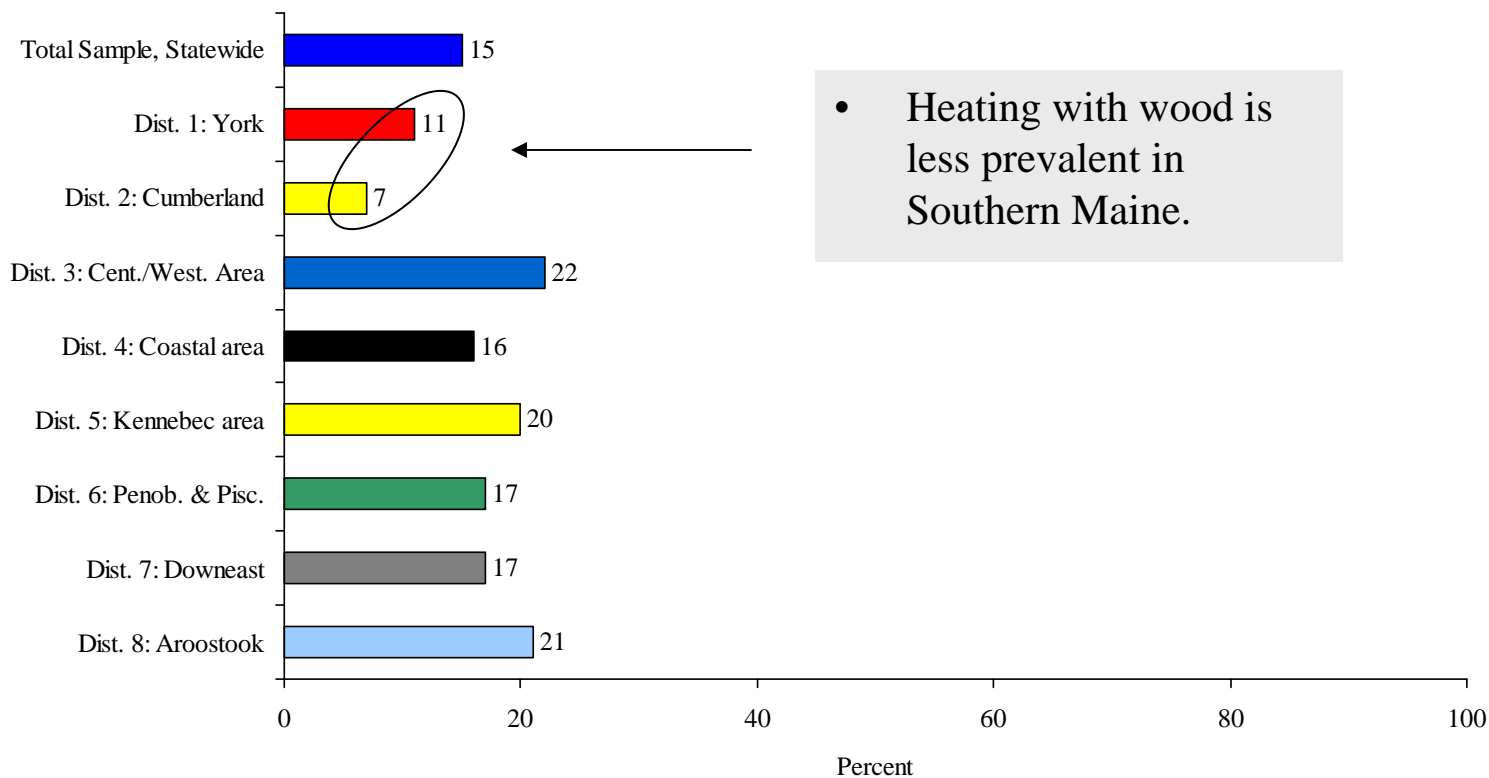
*What one type of fuel was used most last winter for heating your home?*





# Wood Heat, By Public Health District

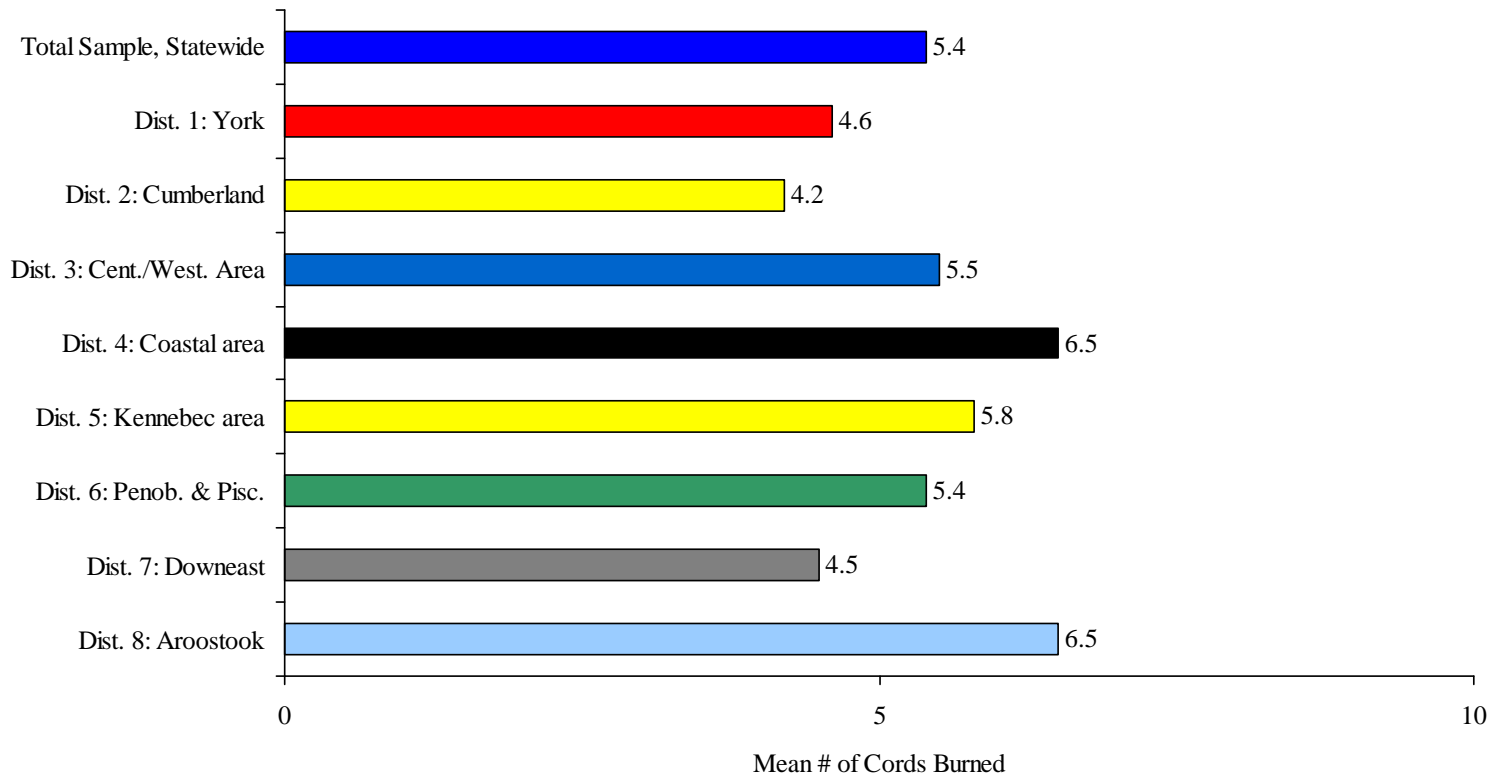
*What one type of fuel was used most last winter for heating your home?*





# Average Volume of Cordwood Used, By Public Health District

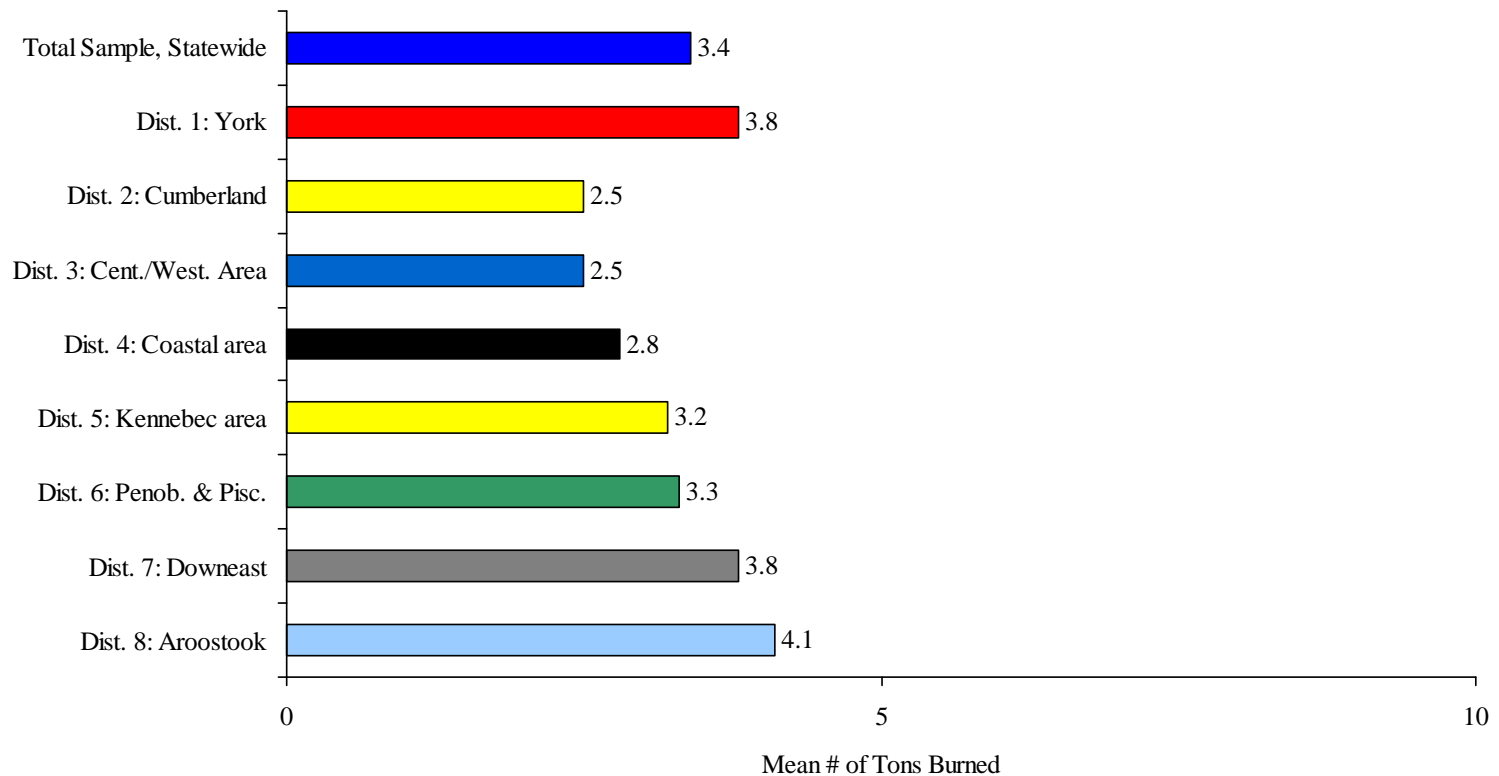
*Approximately how much fuel did use in this device?*





# Average Volume of Wood Pellets Used, By Public Health District

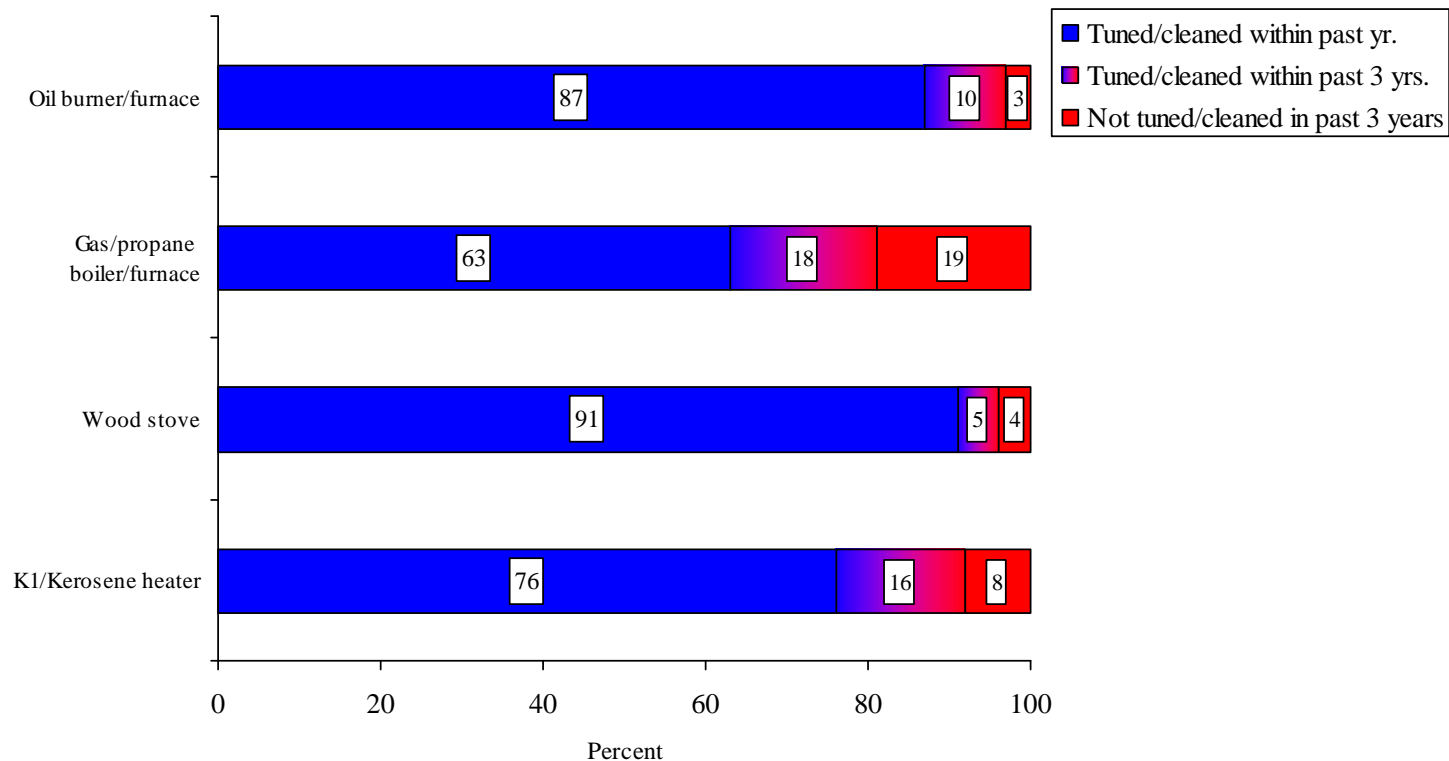
*Approximately how much fuel did use in this device?*





# Recency of Device Being Tuned/Cleaned, by Most Common Types of Systems

*Has this unit been tuned and cleaned within the past year? Has this unit been tuned and cleaned within the past three years?*





# Profiles of Existing Oil Heating Systems, by Being Tuned/Cleaned

Dimension	Among All Homes Heating w/ Oil	Among Those HH's w/ System Not Tuned/Cleaned in Past Year	Among Those HH's w/ System Not Tuned/Cleaned in Past 3 Years
% Who Plan to Purchase New Primary Heating System	23%	24%	25%
% Who Have Weatherized Home in Past 10 Years	<b>64%</b>	57%	56%
% Who Plan to Weatherize	44%	<b>55%</b>	44%
% Who Do <u>Not</u> Feel They Can Adequately Heat Their Home	9%	<b>14%</b>	14%
Age of Burner, < 10 years	48%	<b>58%</b>	<b>75%</b>
Age of Burner, 10 to < 20 years	<b>31%</b>	<b>25%</b>	10%
Age of Burner, 20 to < 30years	11%	11%	8%
Age of Burner, 30 years or more	7%	4%	3%

- Among households heating with oil, those who have not recently tuned/cleaned their oil burner are less likely than others to have had their home weatherized and are more likely to be concerned about their ability to heat their home this winter.

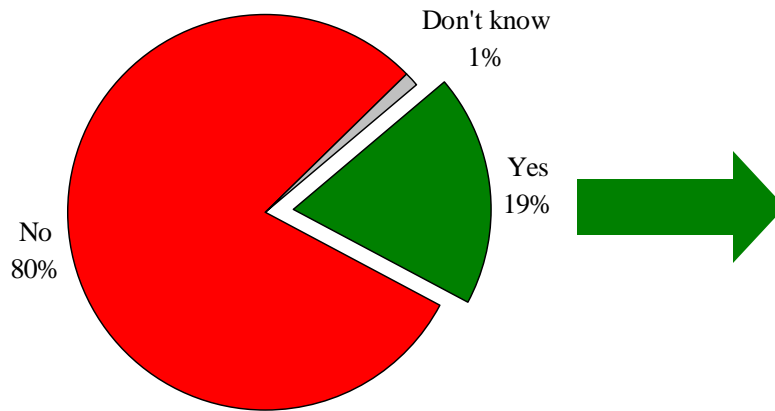


# *Future Home Heating*



# Incidence of Changing or Potentially Changing/Modifying Heating Sources

*Have you already or do you have plans to change or modify any of your heating sources for this upcoming winter heating season?*



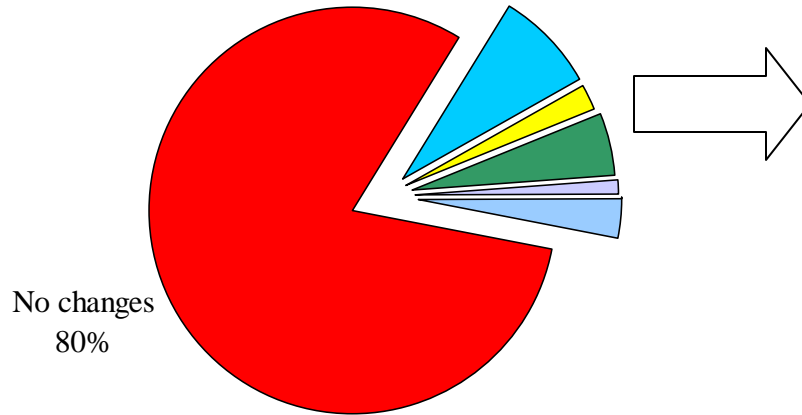
- Those who heated last year with oil are significantly more likely than those who used other fuels to be planning a change.

Please tell me which best matches what you have done or plan to do this coming winter. Would you say you...? *	n=621
Purchased – or will purchase – a new <u>primary heating device</u> ?	28%
You will use an <u>existing supplemental heating source or device</u> as your <u>primary heating source</u> ?	18
You will use an <u>inactive supplemental heating source or device</u> as a <u>primary or supplementary heating source</u> ?	11
You have or will purchase a <u>new device</u> for use as a <u>supplementary heating source</u>	40
Don't know/Refused to specify	2

\* Based on respondents who indicated having made or potentially making a change or modification.



# Changes or Potential Changes/Modifications to Heating Sources, Among All Residents



- While most Maine households do not anticipate making any changes, about 1-in-7 will make (or have made) some kind of purchase of a new system for either primary or supplementary heat.

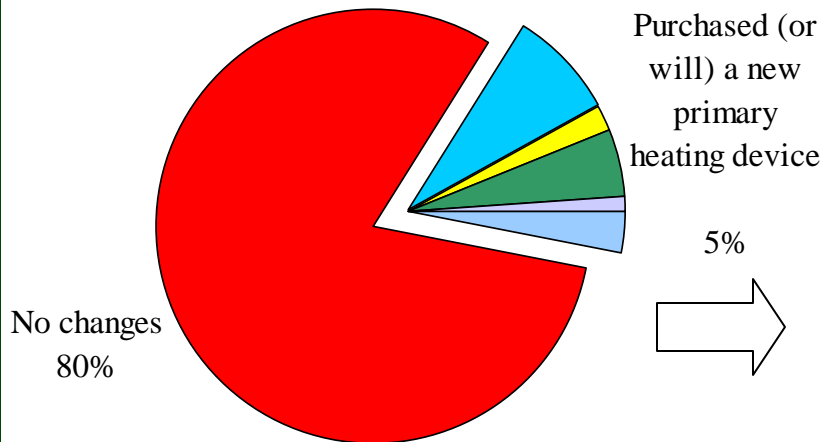
Please tell me which best matches what you have done or plan to do this coming winter. Would you say you...? *	
Purchased – or will purchase – a new <u>primary heating device</u> ?	5%
You will use an <u>existing supplemental heating source or device as your primary heating source</u> ?	3
You will use an <u>inactive supplemental heating source or device as a primary or supplementary heating source</u> ?	2
You have or will purchase a <u>new device</u> for use as a <u>supplementary heating source</u>	8
Don't know	1

\* Based on total sample.



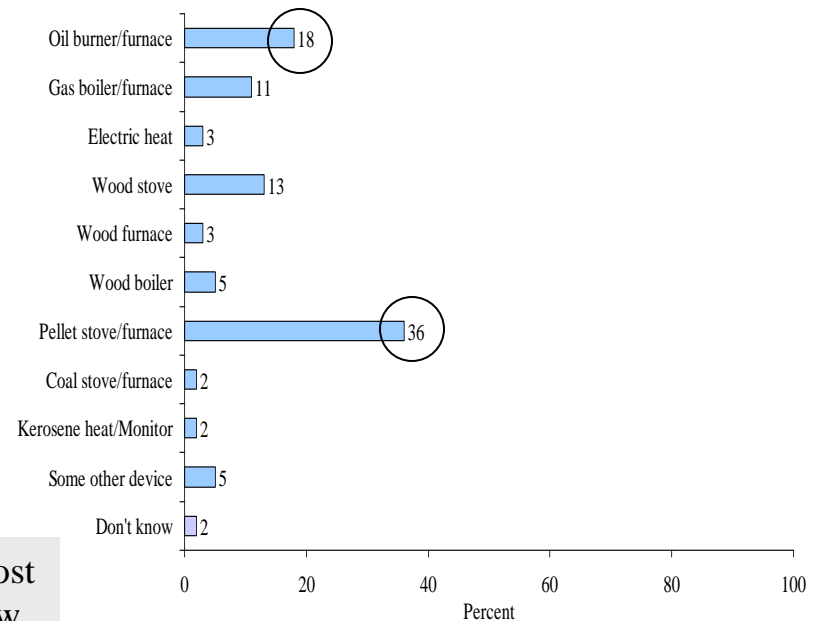
# Changes or Potential Changes/Modifications to Heating Sources

*Please tell me which best matches what you have done or plan to do this coming winter. Would you say you...?*



- Among those adding a new primary system, the most common changes include either pellet stoves or new oil burners.
  - Planned installation of new pellet stoves is particularly common in Aroostook County.
- Most will use a contractor to install the new device.

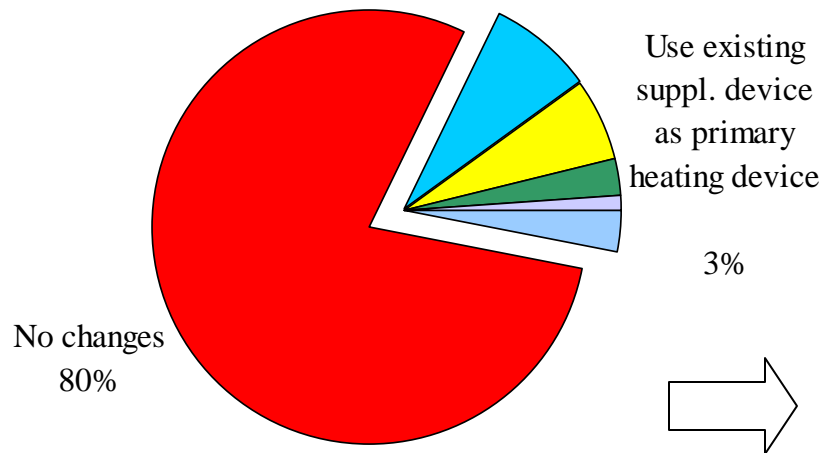
*What have you or will you purchase as a new primary heating source or device?*





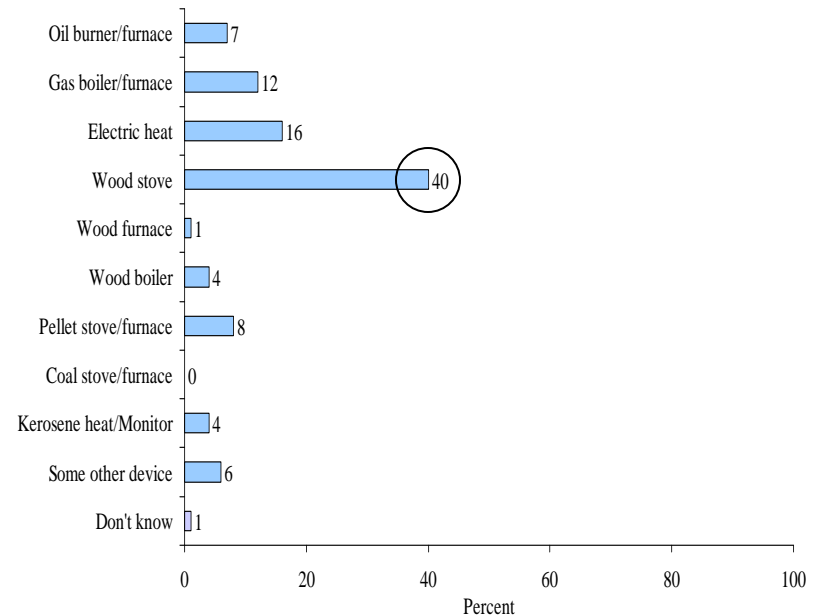
# Changes or Potential Changes/Modifications to Heating Sources

*Please tell me which best matches what you have done or plan to do this coming winter. Would you say you...?*



- Among those planning to employ an existing supplementary device as their primary heating system, the most common change involves using an existing secondary wood stove for principal heat.

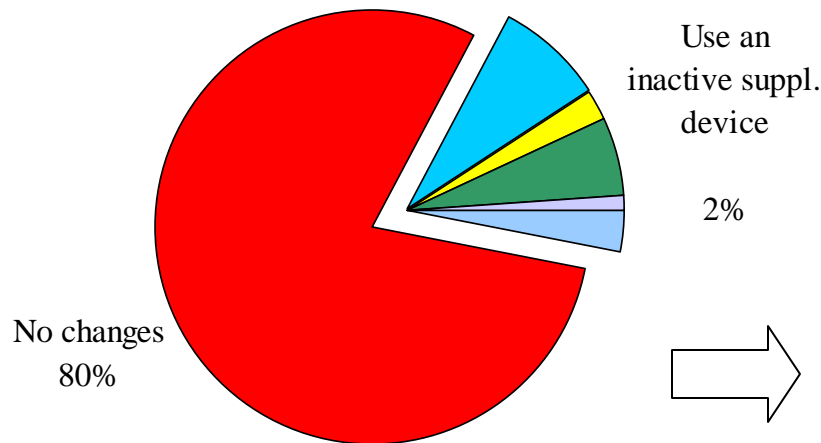
*What heating source or device will you be using?*





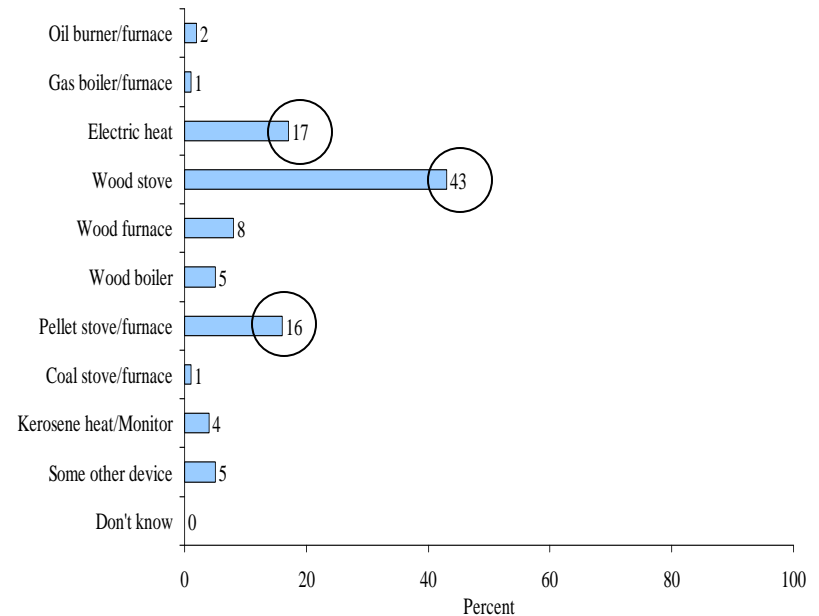
# Changes or Potential Changes/Modifications to Heating Sources

*Please tell me which best matches what you have done or plan to do this coming winter. Would you say you...?*



- Among those few who are planning to re-deploy an inactive supplementary device, the most common changes involve wood stoves, dormant electric heat, and pellet stoves/furnaces.

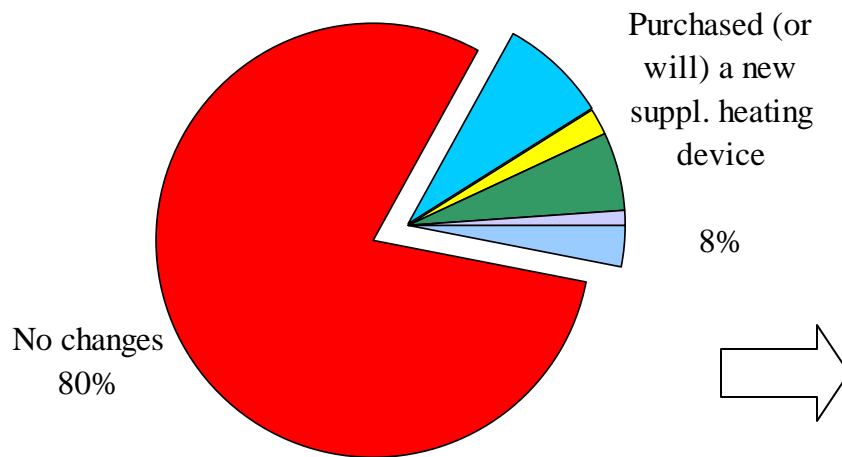
*What heating source or device will you be using?*





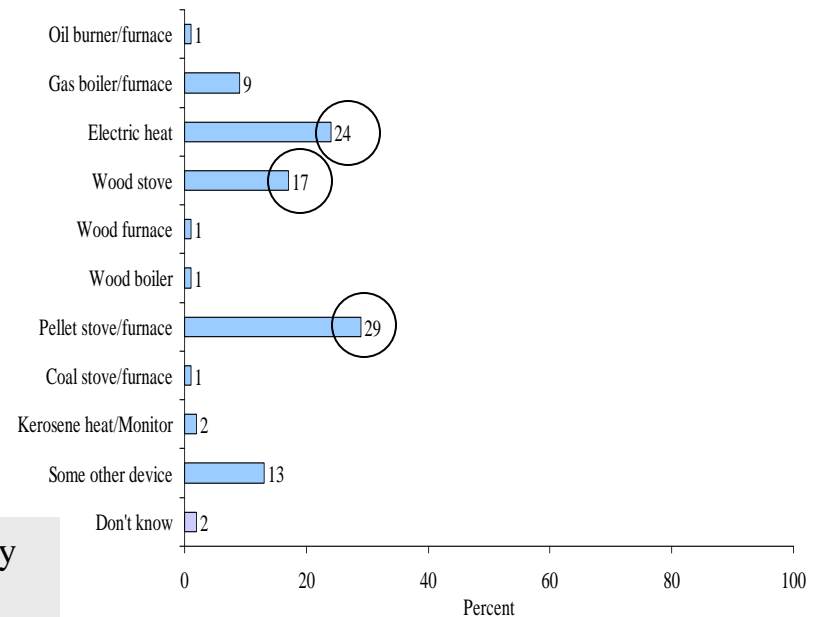
# Changes or Potential Changes/Modifications to Heating Sources

*Please tell me which best matches what you have done or plan to do this coming winter. Would you say you...?*



- New supplemental heating systems most commonly involve pellet or wood stoves, as well as electric heating systems.
- Residents are divided about installing this new device, with roughly half claiming they'll install the device themselves and about half saying they'll use a contractor.

*What have you or will you purchased as a new supplementary heating source or device?*





# Changes in Primary Heating System: 2008 to 2009, By Common Existing Systems

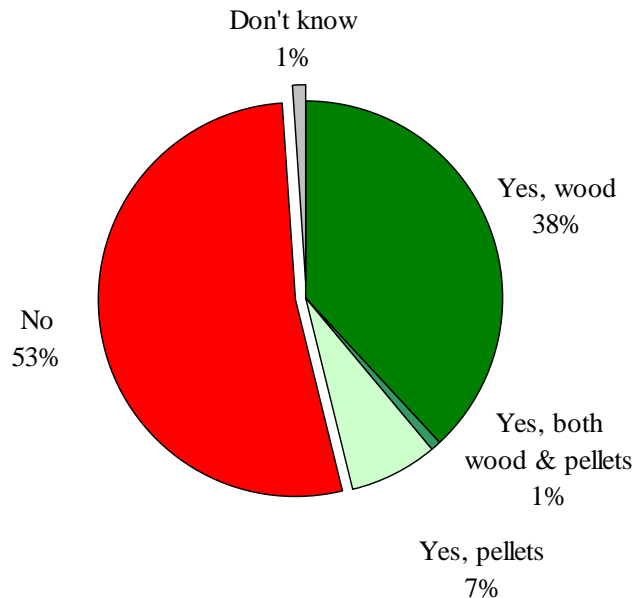
Heating Plans for 2009	Total	Most Common 2008 Primary Heating System			
		Oil Burner or Furnace	Gas or Propane System	Wood Stove	K1/Monitor
No changes	80%	78%	89%	87%	85%
New oil burner	1	1	-	1	-
New gas system	1	1	1	1	1
New wood stove, furnace, boiler	1	1	-	1	1
New pellet stove or furnace	2	2	1	1	1
New electric system	^	^	-	-	-
Use suppl. or dormant oil burner	^	^	-	1	-
Use suppl. or dormant gas system	^	1	1	-	-
Use suppl. or dormant wood stove, furnace, or boiler	3	3	2	3	2
Use suppl. or dormant pellet stove or furnace	1	1	-	-	-
Use suppl. or dormant electric system	1	1	1	1	1
New supplemental device	8	9	5	5	7
Other or yet undetermined change	2	2	1	1	2

^ Denotes less than 1%.



# Plans for Burning Wood or Pellets for Heat This Upcoming Winter

*Are you planning on burning wood or wood pellets his upcoming winter for heat?*



- Close to half of Maine households surveyed claim they'll burn cordwood or pellets this coming winter.
  - Interestingly, those who'll be burning wood or pellets are less likely to be concerned about their ability to provide adequate heat this winter.
  - Households with older and/or lower-income residents are the least likely to be burning wood or pellets.
  - Regionally, residents in York and Cumberland counties are the least likely to burn either wood or pellets.



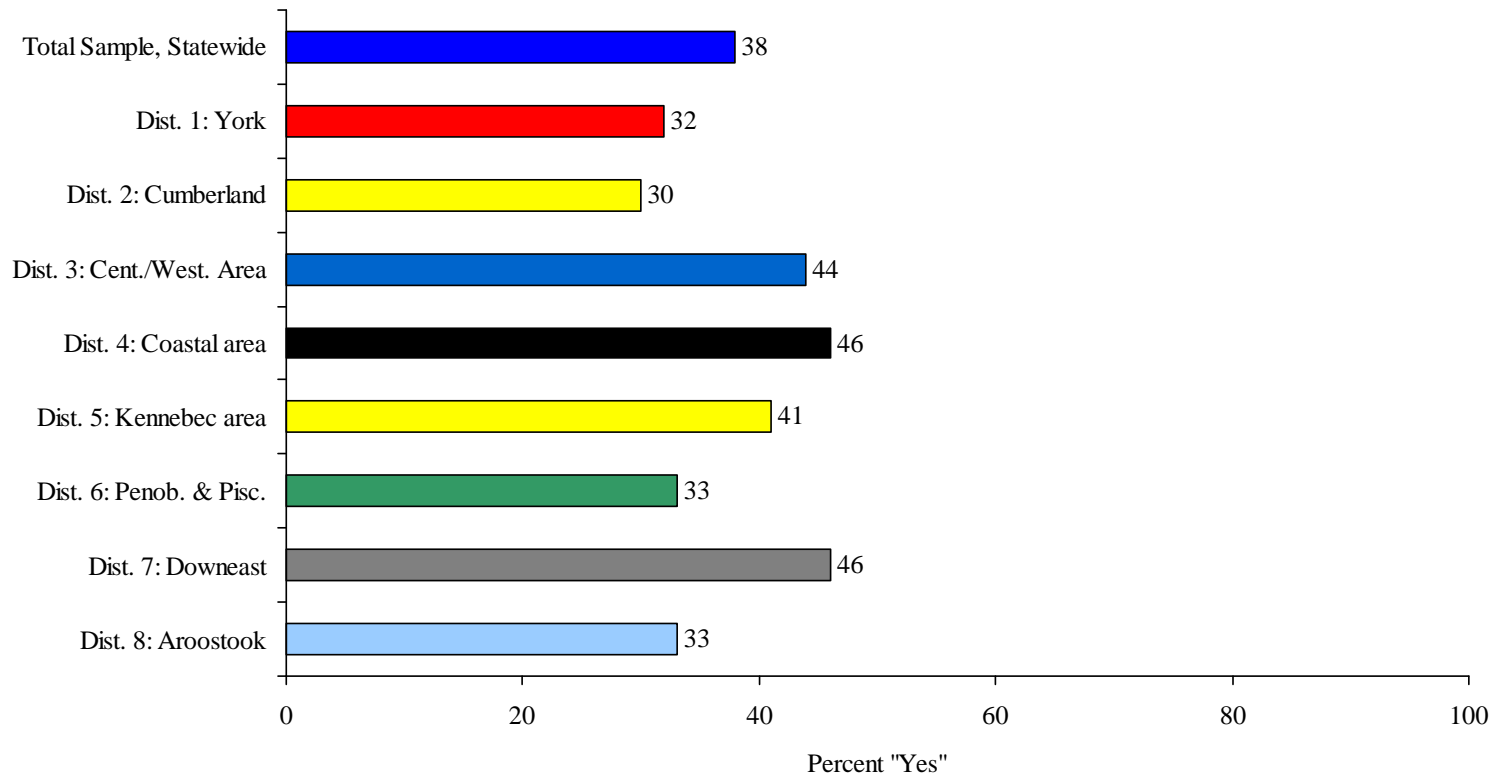
# Planned Volume of Wood/Pellets, Among Households Planning to Burn

Volume	Percent
<b><u>Cordwood</u></b>	
1 or fewer cords	16%
2 to 3 cords	34
4 to 5 cords	29
More than 5 cords	17
Don't know	5
<b><i>Average</i></b>	<b><i>3.9 cords</i></b>
<b><u>Pellets</u></b>	
1 or fewer tons	10%
2 to 3 tons	51
4 to 5 tons	21
More than 5 tons	6
Don't know	13
<b><i>Average</i></b>	<b><i>3.2 tons</i></b>



# Plans for Burning Wood for Heat, By Public Health District

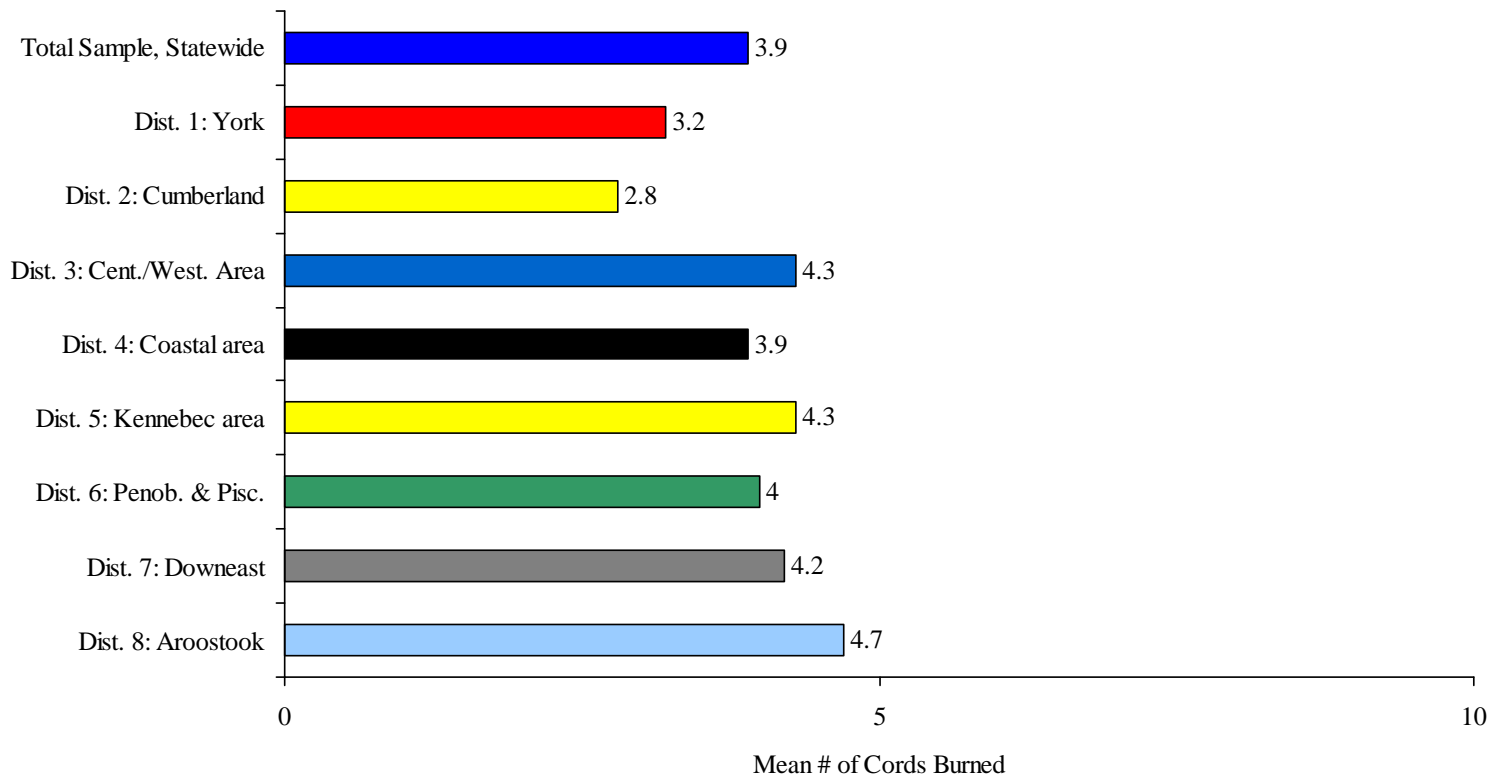
*Are you planning on burning wood this upcoming winter for heat?*





# Average Volume of Cordwood Planned, By Public Health District

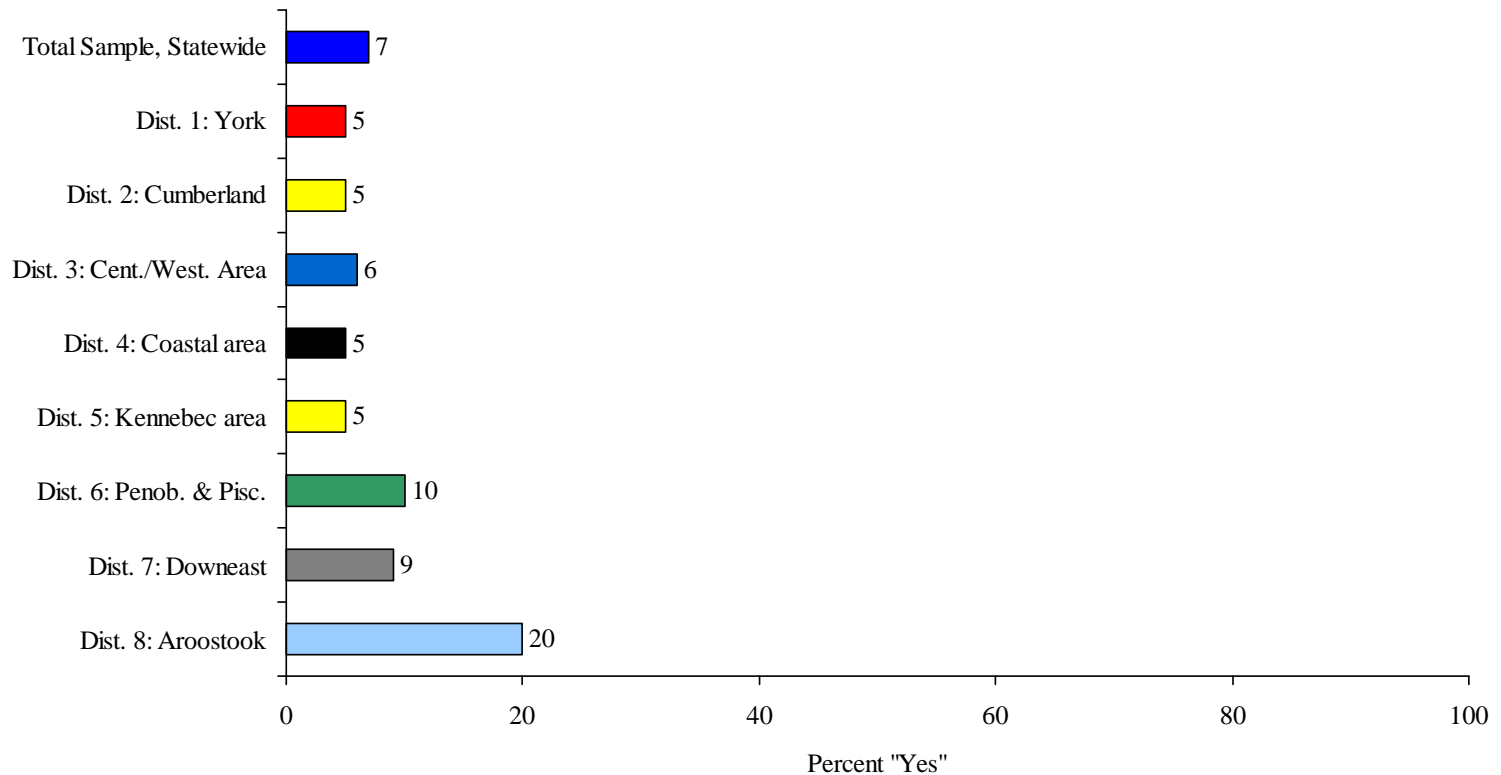
*How much fuel do you expect to burn?*





# Plans for Burning Wood Pellets for Heat, By Public Health District

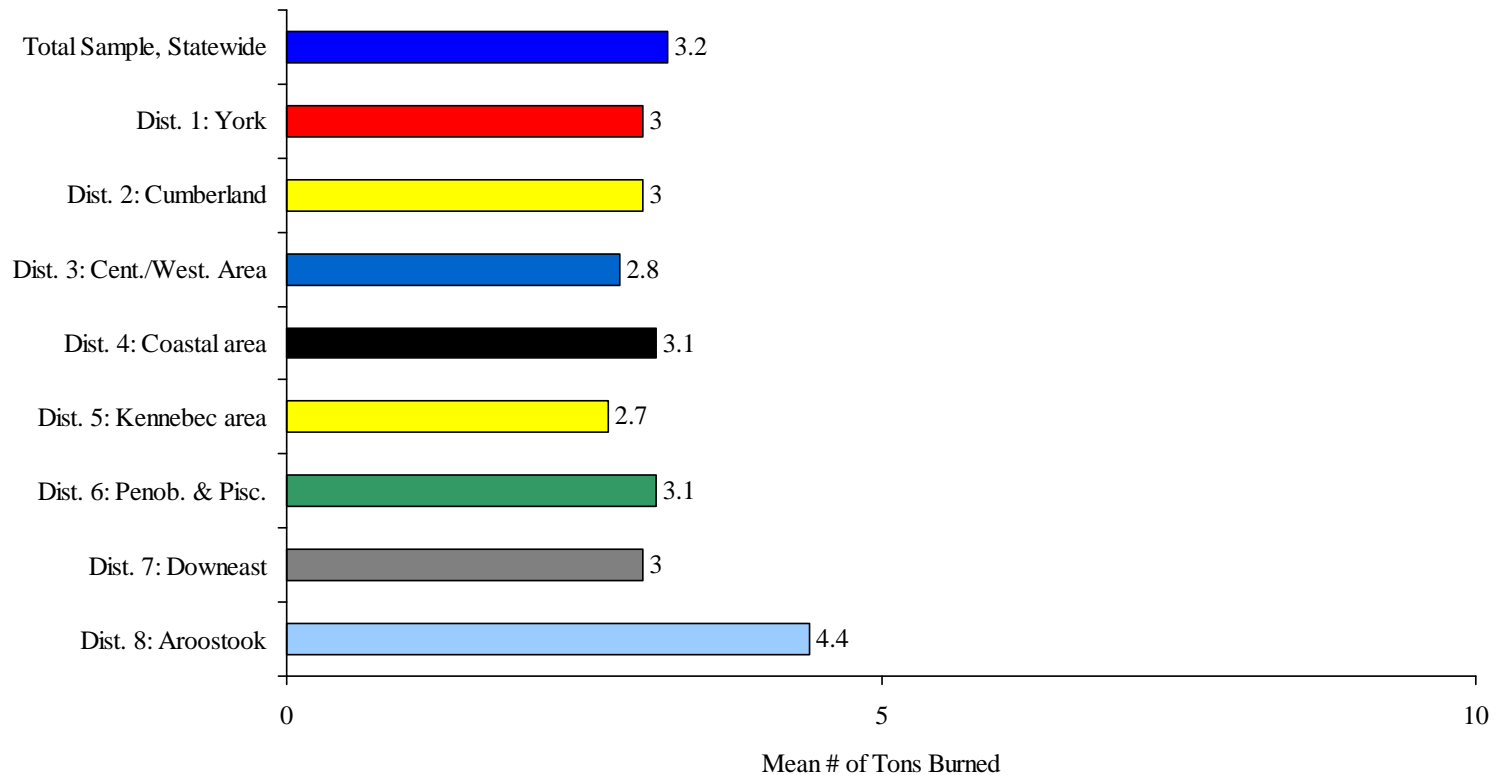
*Are you planning on burning wood pellets this upcoming winter for heat?*





# Average Volume of Wood Pellets Planned, By Public Health District

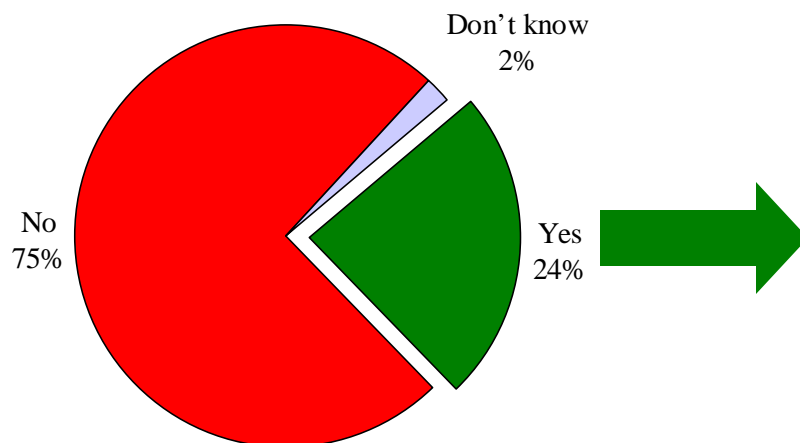
*How much fuel do you expect to burn?*





# Incidence of Planned Space Heater Usage

*Do you plan to use an electric, gas or kerosene space heater to supplement your heating needs this coming winter?*



What kind of space heater will you use? *	Percent Using	Avg. # in Use
Will it be...		
Electric	82%	1.4
Vented	12	1.0
Non-vented	27	1.3
Don't know	1	1.0

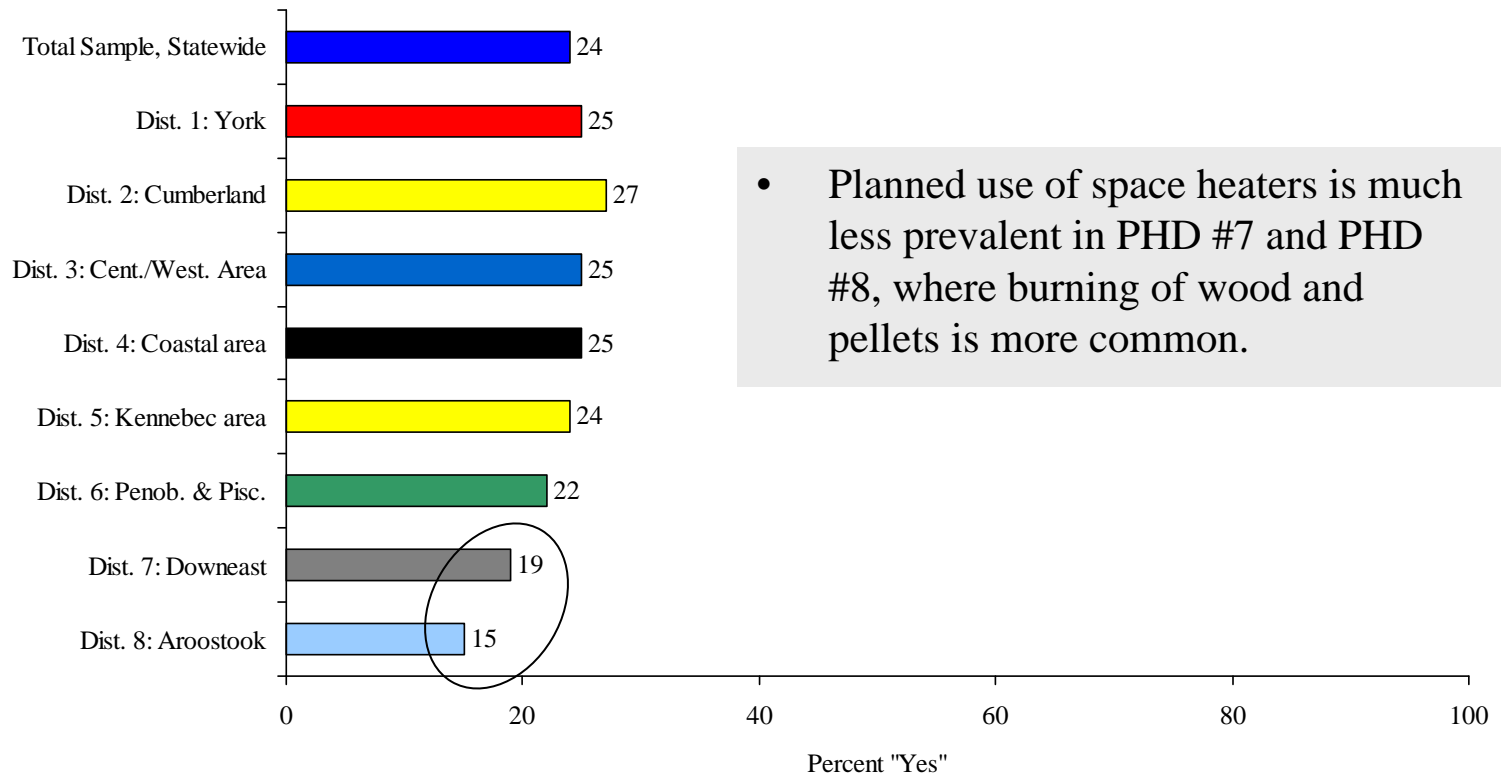
\* Based on respondents who indicated planning on using a space heater in upcoming winter.

- Roughly one-quarter of Maine households plan to use a space heater this coming winter, with those who heated principally with oil or K1 last year being more likely to say they'll supplement this year with a space heater.
- Also those who say they're making household cutbacks due to energy costs are more likely to say they'll use space heating.



# Incidence of Planned Space Heater Usage, By Public Health District

*Do you plan to use an electric, gas or kerosene space heater to supplement your heating needs this coming winter?*





# Incidence of Planned Space Heater Usage Among Key Subgroups

What kind of space heater will you use? * Will it be...	Percent Using (n=761)	Among HH with Resident w/ Asthma	Among HH with Resident w/ Other Chronic Condition	Among HH where Smoking is Allowed
Electric	82%	77%	79%	75%
Vented	12	8	10	17
Non-vented	27	12	28	19
Don't know	1	3	3	1

\* Based on respondents who indicated planning on using a space heater in upcoming winter.

- When examined according to key subgroups of interest, usage of various types of space heaters was directionally less prevalent in many cases among these households than among all expected users, overall.

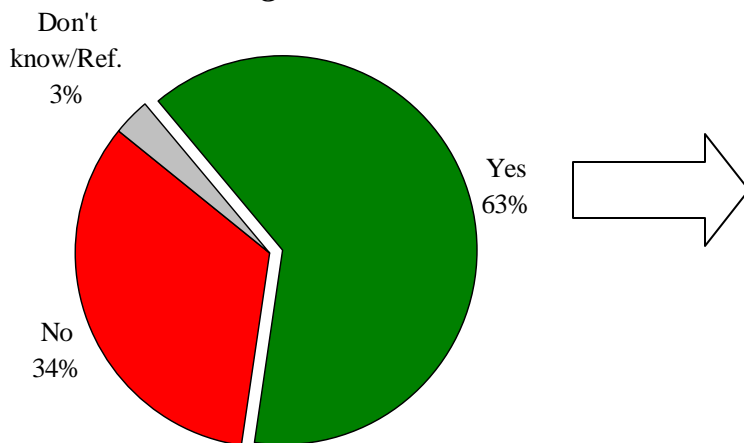


# Home Weatherization



# Home Weatherization

*Has your home been weatherized in the past 10 years? In other words, have measures been taken to make the home more airtight?*



Was this weatherization done by you or a previous owner or was it done as part of a community action program or by a professional contractor? *	n=2,048
Own, self, prior owner	59%
Community action program	3
Contractor	37
Don't know/Refused to specify	1

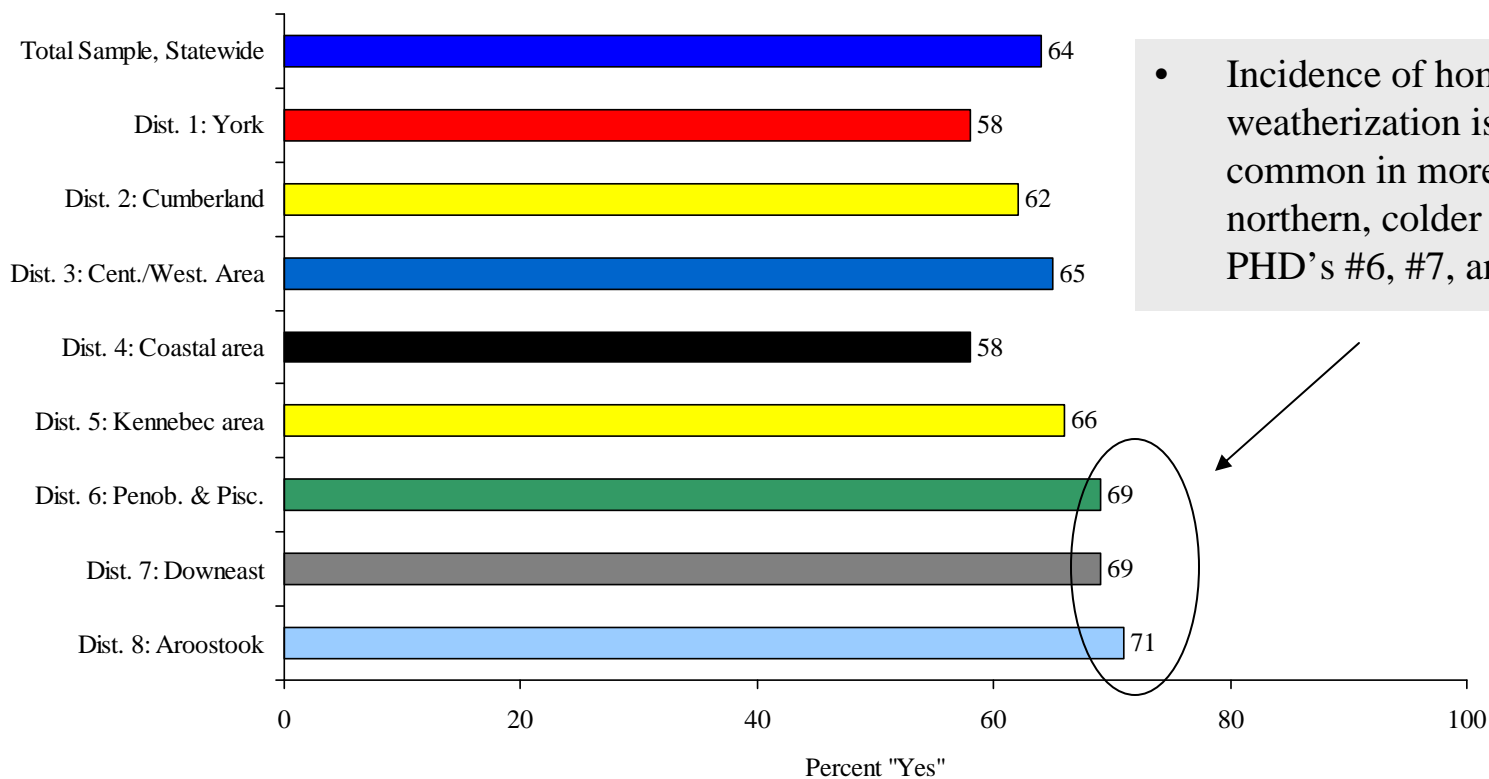
\* Based on respondents who indicated they have weatherized their home.

- Incidence of home weatherization is more common in more northern, colder Maine PHD's #6, #7, and #8.
- Very few respondents in southern Maine relied on a community action program to perform their weatherization.



# Home Weatherization, By Public Health District

*Has your home been weatherized in the past 10 years? In other words, have measures been taken to make the home more airtight?*

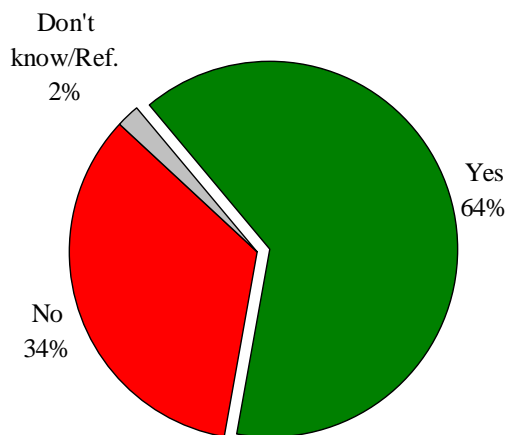


- Incidence of home weatherization is more common in more northern, colder Maine PHD's #6, #7, and #8.



# Home Weatherization, By Age of Residence

*Has your home been weatherized in the past 10 years? In other words, have measures been taken to make the home more airtight?*



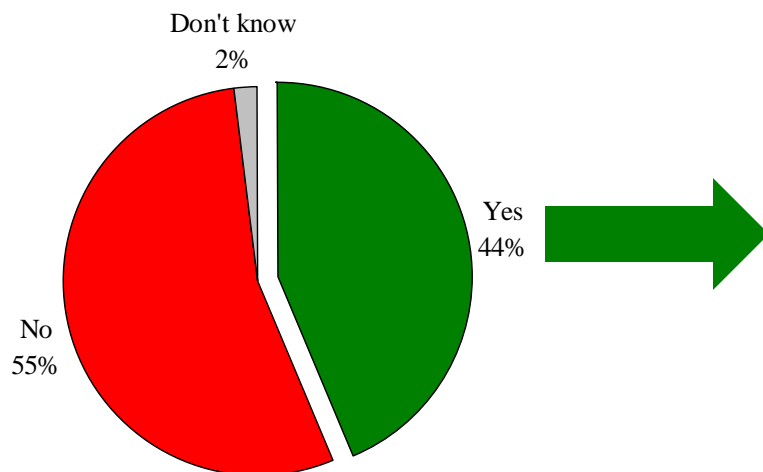
Has your home been weatherized in the past 10 years?	Tot.	Age of Home, in Years				
		< 10	10-20	21-50	51-100	> 100
Yes	64%	50%	49%	65%	75%	78%
No	34	49	49	34	23	21
Don't know	2	1	3	2	2	1

- Not surprisingly, homeowners with older homes (i.e. more than 50 years old) are more likely have had them weatherized.



# Plans for Weatherization or Other Energy Efficiency Work

*Do you plan to weatherize or make modifications to increase the energy efficiency of your home?*



Will you be doing this work on your own or do you expect to use a contractor? *	n=1,404
Own/self	77%
Contractor	21
Don't know	2

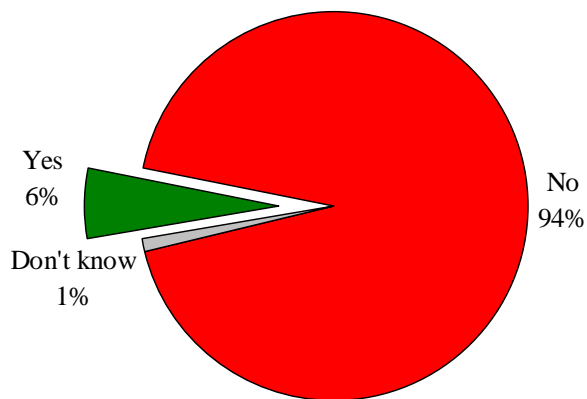
\* Based on respondents who indicated they plan to weatherize or otherwise increase the energy efficiency of their home.

- When asked if they planned to weatherize or make other changes to their home for the purposes of boosting energy efficiency, more than 4-in-10 households claim they are planning to do so.
- Plans to weatherize are significantly more common among: those concerned about their ability to provide adequate heat this winter, those changing heating sources this winter, and those who are making other cutbacks because of energy costs.



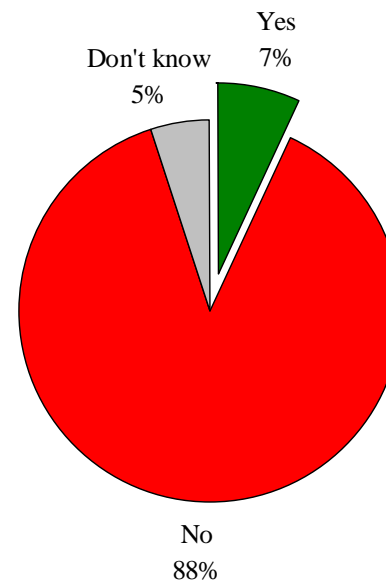
# Home Energy Audits

*As a means to potentially save energy, have you had a professional energy audit done on your home in the past year?*



- Fewer than 1-in-10 Maine households have had an energy audit performed recently.

*Do you plan to have a professional energy audit done on your home in the next 12 months? \**

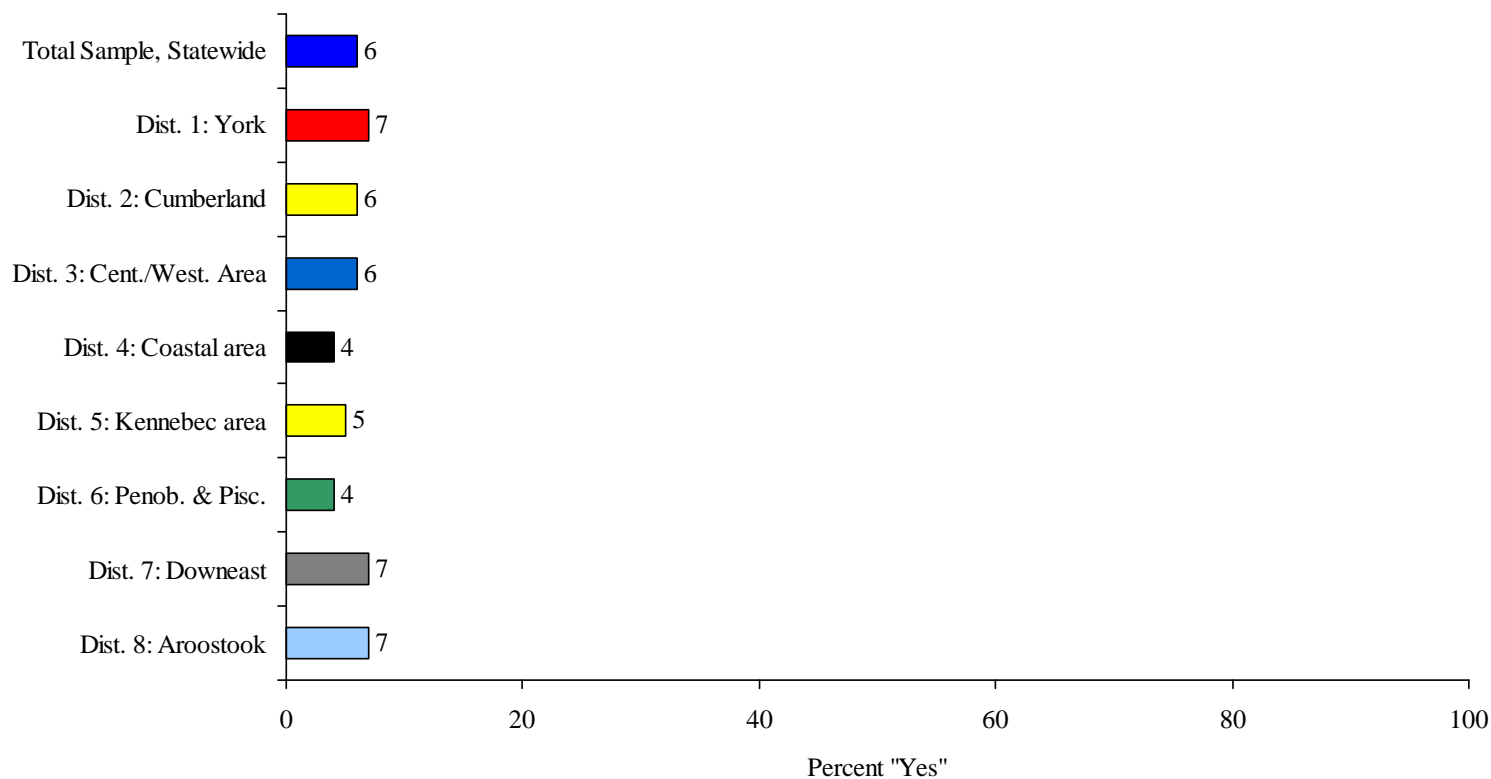


\* Based on respondents who have not had an audit in the last year.



# Home Energy Audits, By Public Health District

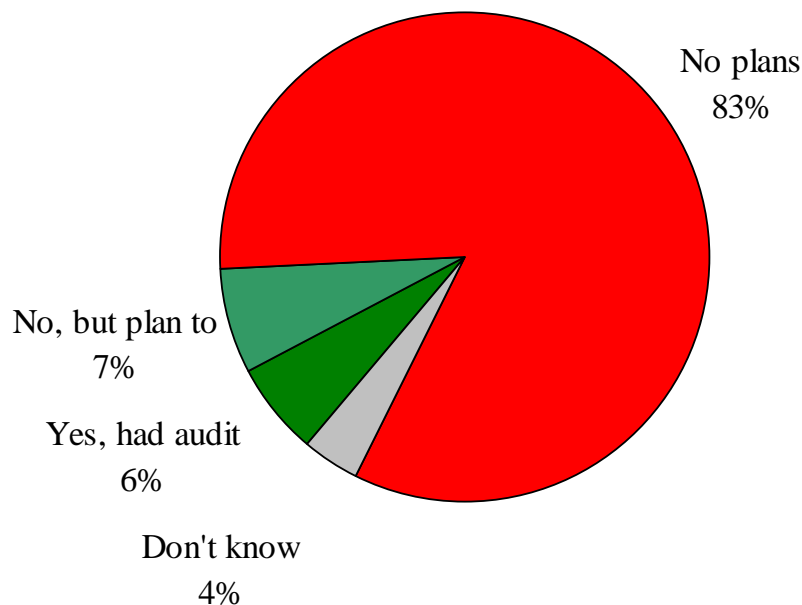
*As a means to potentially save energy, have you had a professional energy audit done on your home in the past year?*





# Energy Audit Summary

*As a means to potentially save energy, have you had a professional energy audit done on your home in the past year? (If not) Do you plan to have a professional energy audit done on your home in the next 12 months?*

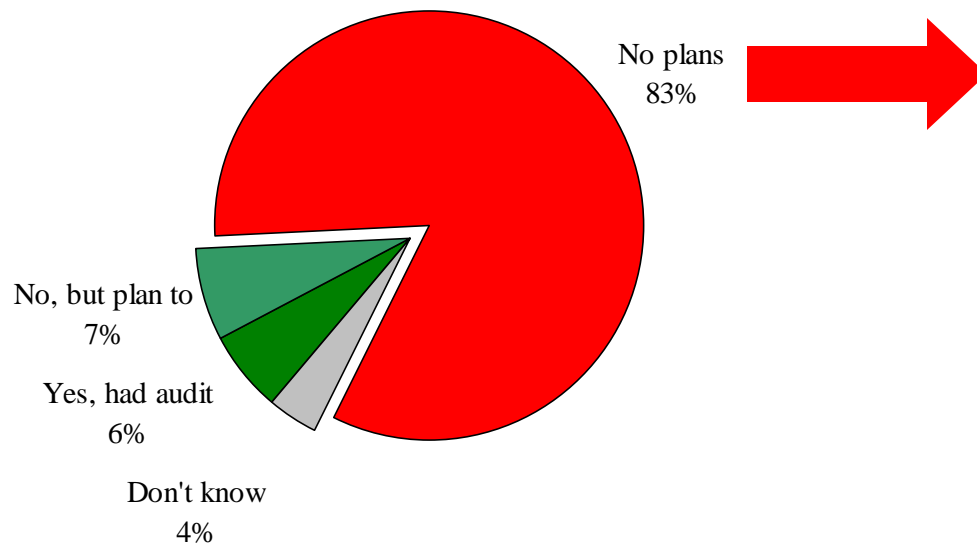


- Few Maine households have recently had an energy audit performed; only a slightly greater proportion of those who have not say that they plan to do so in the coming year.
- While still limited overall, those Mainers concerned about their ability to heat their homes are significantly more likely to have had a recent audit, as well as more likely to say they're planning to have one conducted.



# Barriers to Conducting Energy Audit

*As a means to potentially save energy, have you had a professional energy audit done on your home in the past year? (If not) Do you plan to have a professional energy audit done on your home in the next 12 months?*



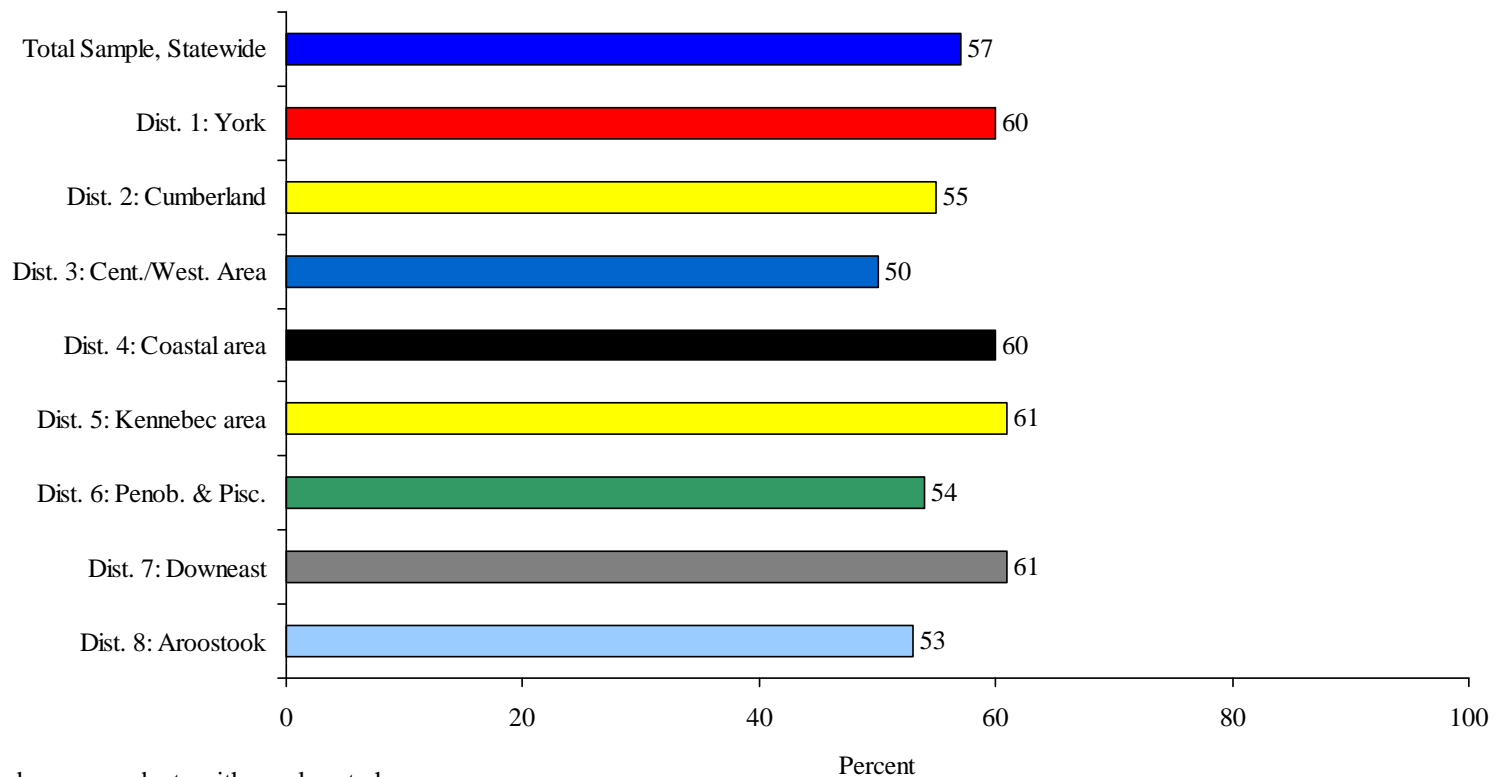
What is your primary reason either for <u>not</u> having had a <u>professional energy audit</u> done on your home or <u>not</u> planning to do so in the near future? *	n=2,805
Unnecessary, do not see need	57%
Cost/Cannot afford/Waste of \$	20
Uncertain of benefits/Not sure what audit is	7
Will do it on own/self	4
Current home is new and/or energy efficient	2
Haven't considered	2

\* Based on respondents with no plans to have an energy audit done on their home. Top responses shown; see Summary tabulations for full accounting of responses.



# Citations of *Lack of Necessity* as Barrier for Energy Audits, By Public Health District

*What is your primary reason either for not having had a professional energy audit done on your home or not planning to do so in the near future? \**

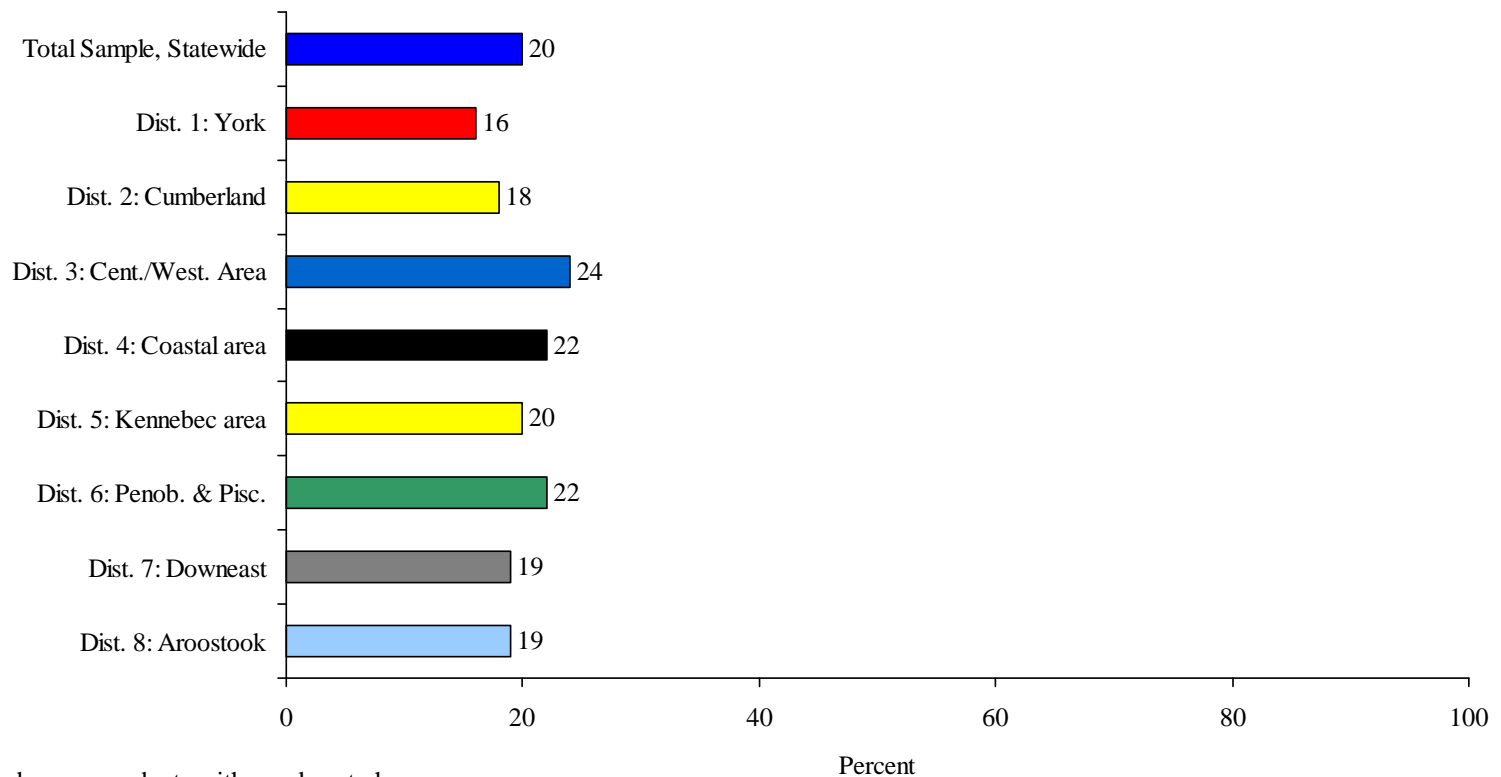


\* Based on respondents with no plans to have an energy audit done on their home.



# Citations of *Cost* as Barrier for Energy Audits, By Public Health District

*What is your primary reason either for not having had a professional energy audit done on your home or not planning to do so in the near future? \**

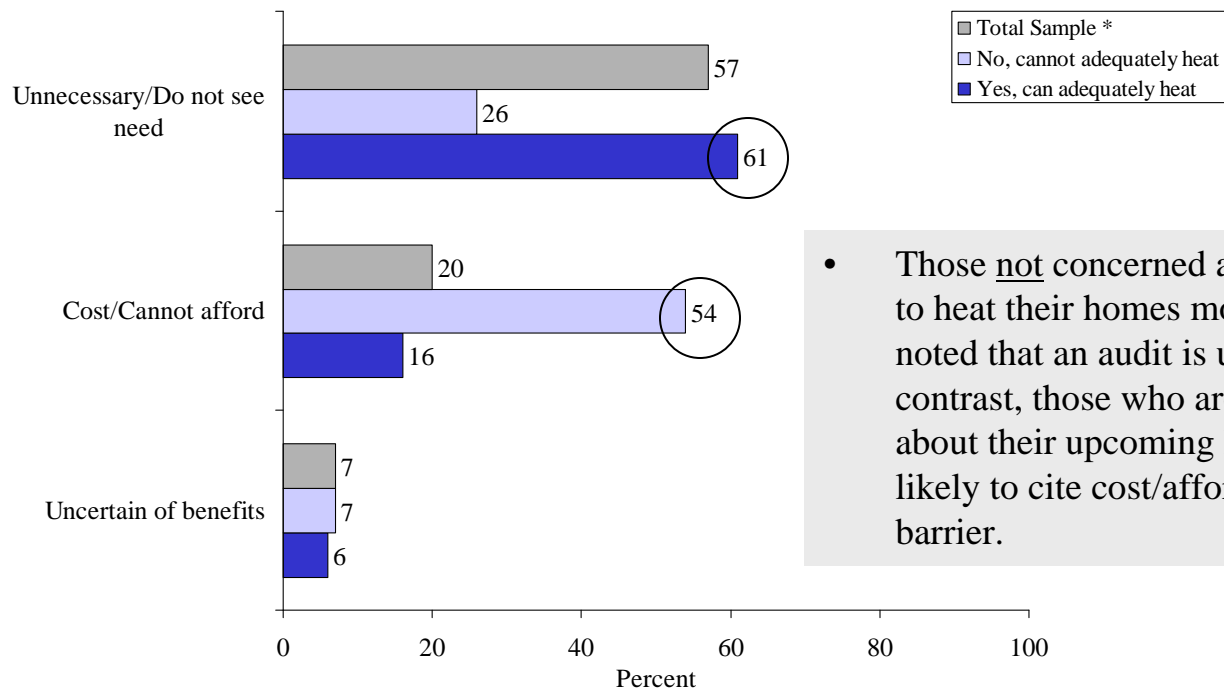


\* Based on respondents with no plans to have an energy audit done on their home.



# Reason for Not Conducting Energy Audit, By Perceived Ability to Adequately Heat Home

*This coming winter, which of the following measures do you plan to undertake in order to reduce your heating costs and conserve energy?*



- Those not concerned about their ability to heat their homes more commonly noted that an audit is unnecessary; by contrast, those who are concerned about their upcoming heating are more likely to cite cost/affordability as a barrier.

\* Based on respondents with no plans to have an energy audit done on their home.  
Top responses shown; see Summary tabulations for full accounting of responses.

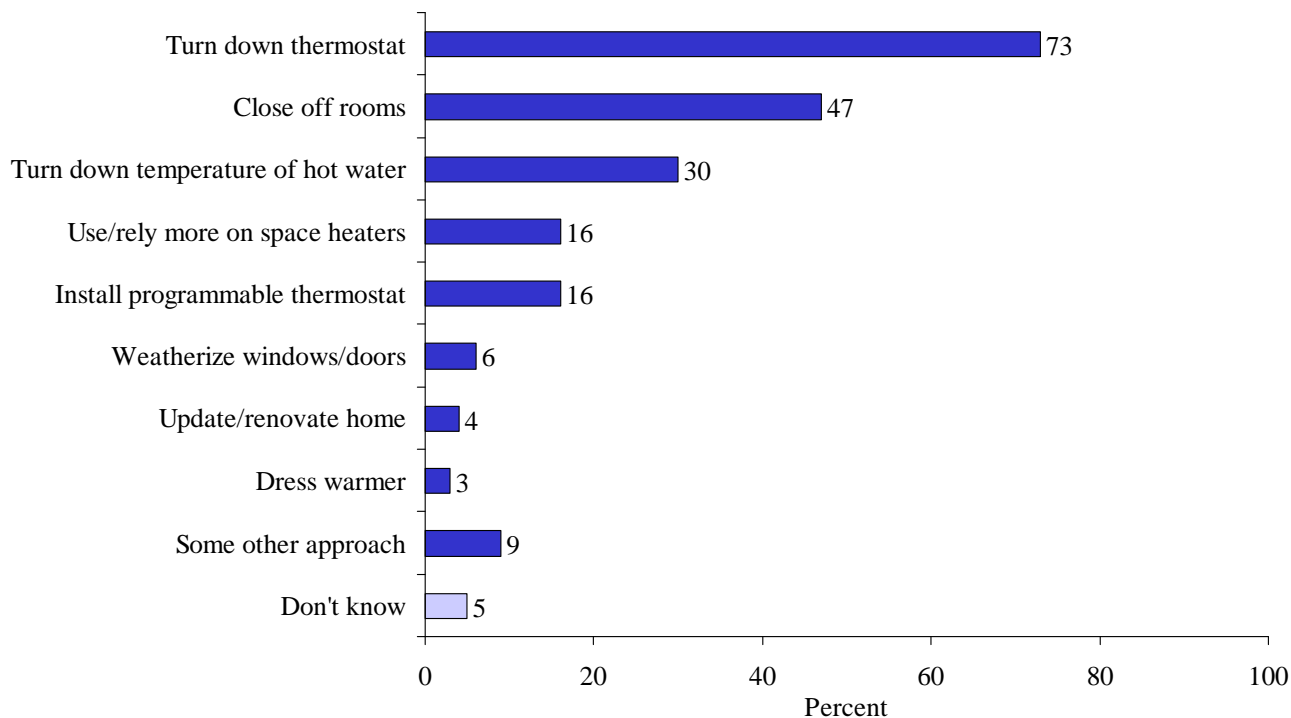


## *Other Conservation Efforts & Cutbacks*



# Anticipated Conservation Measures

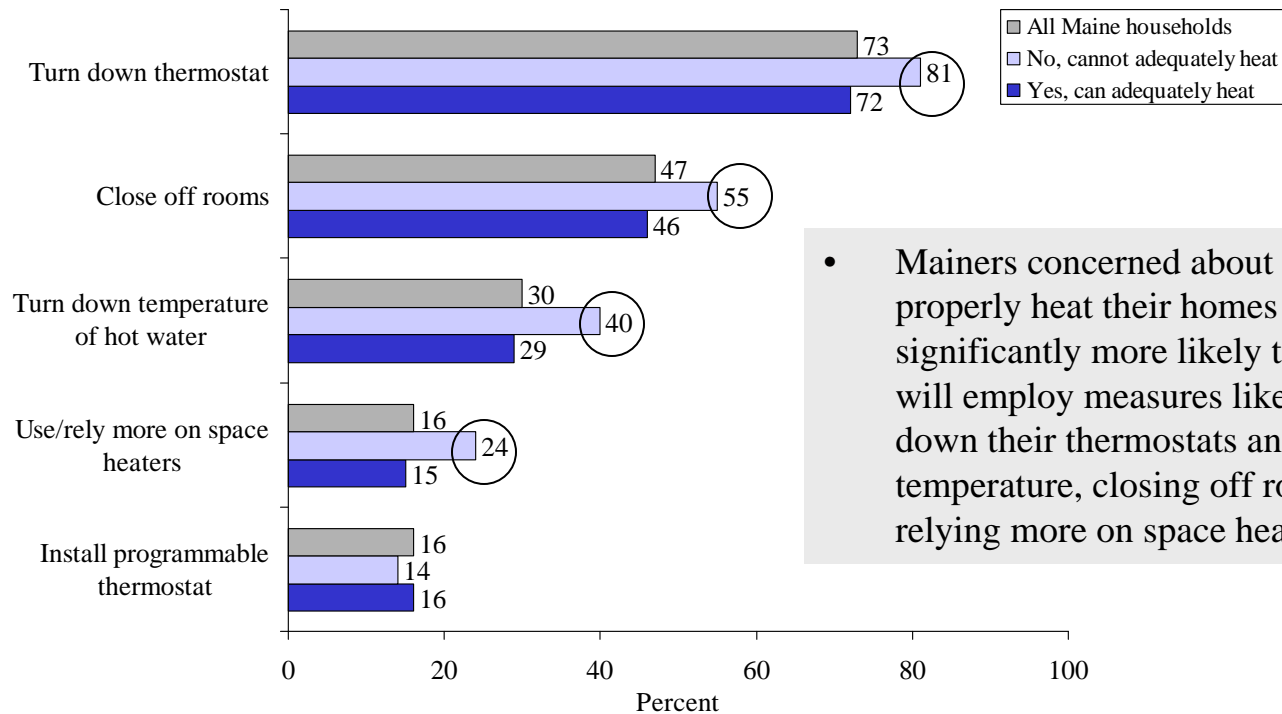
*This coming winter, which of the following measures do you plan to undertake in order to reduce your heating costs and conserve energy?*





# Anticipated Conservation Measures, By Perceived Ability to Adequately Heat Home

*This coming winter, which of the following measures do you plan to undertake in order to reduce your heating costs and conserve energy?*

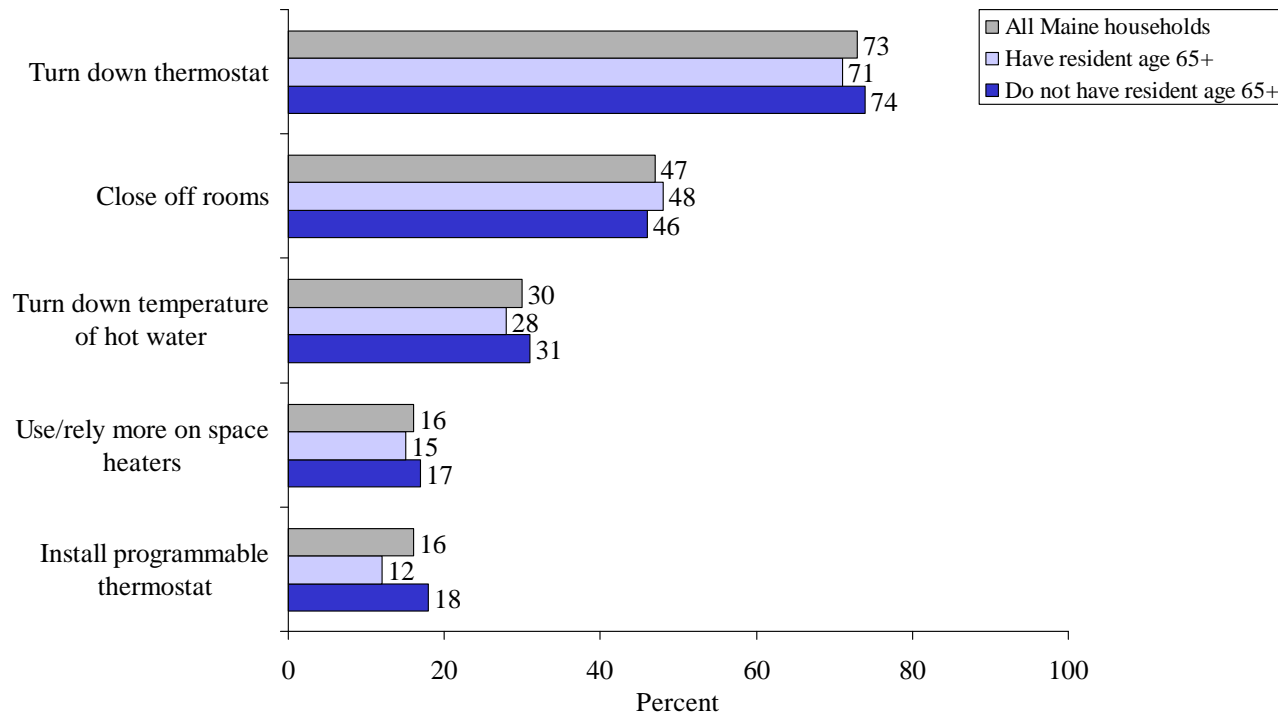


- Mainers concerned about being able to properly heat their homes are significantly more likely to claim they will employ measures like turning down their thermostats and hot water temperature, closing off rooms, and relying more on space heaters.



# Anticipated Conservation Measures, By Presence of Seniors in the Household

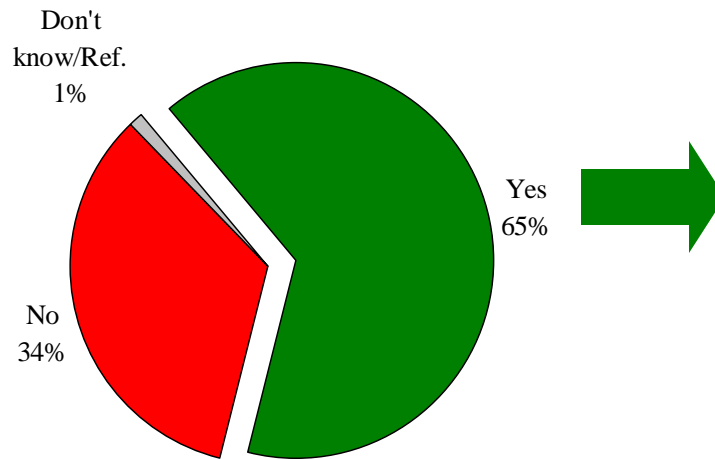
*This coming winter, which of the following measures do you plan to undertake in order to reduce your heating costs and conserve energy?*





# Incidence of Modifying or Changing Use of Motorized Transportation

*In order to conserve fuel and save money, have you made any adjustments, modifications, or changes to how you use motorized transportation?*



- Those who claim they've modified their transportation usage are also more likely to be making other household or personal cutbacks.

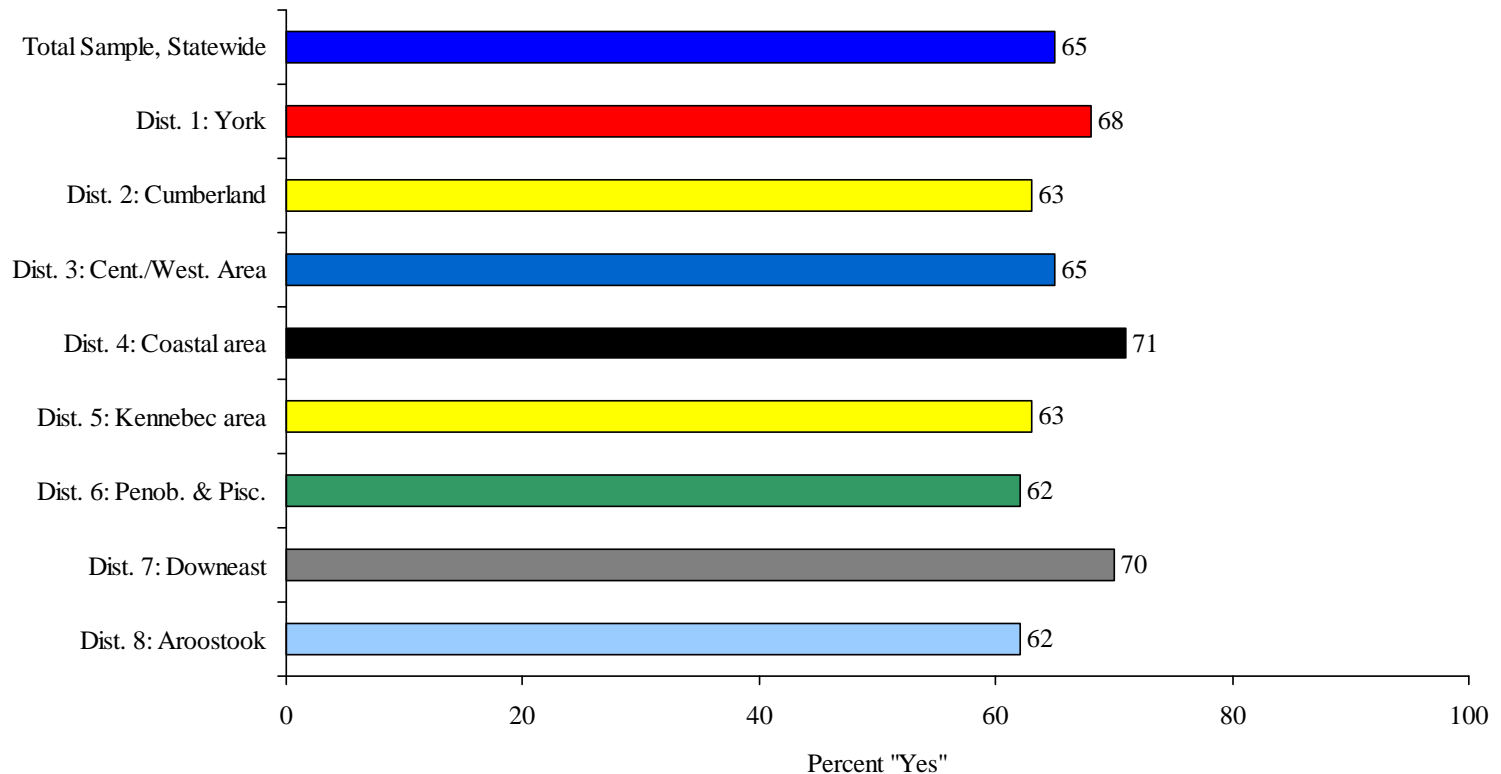
What kind of changes or modifications have you made? *	n=2,096
Driving less/Eliminating unnecessary trips	78%
Drive or bought a more fuel-efficient vehicle/Drive less fuel-efficient car less often	22
Car pooling/Ride sharing	11
Biking or walking more	6
Drive slower/Reduce speed	5

\* Based on respondents who indicated having made transportation changes.  
Most common responses only shown; see Summary Tabulations for full accounting of responses.



# Incidence of Modifying or Changing Use of Motorized Transportation, By Public Health District

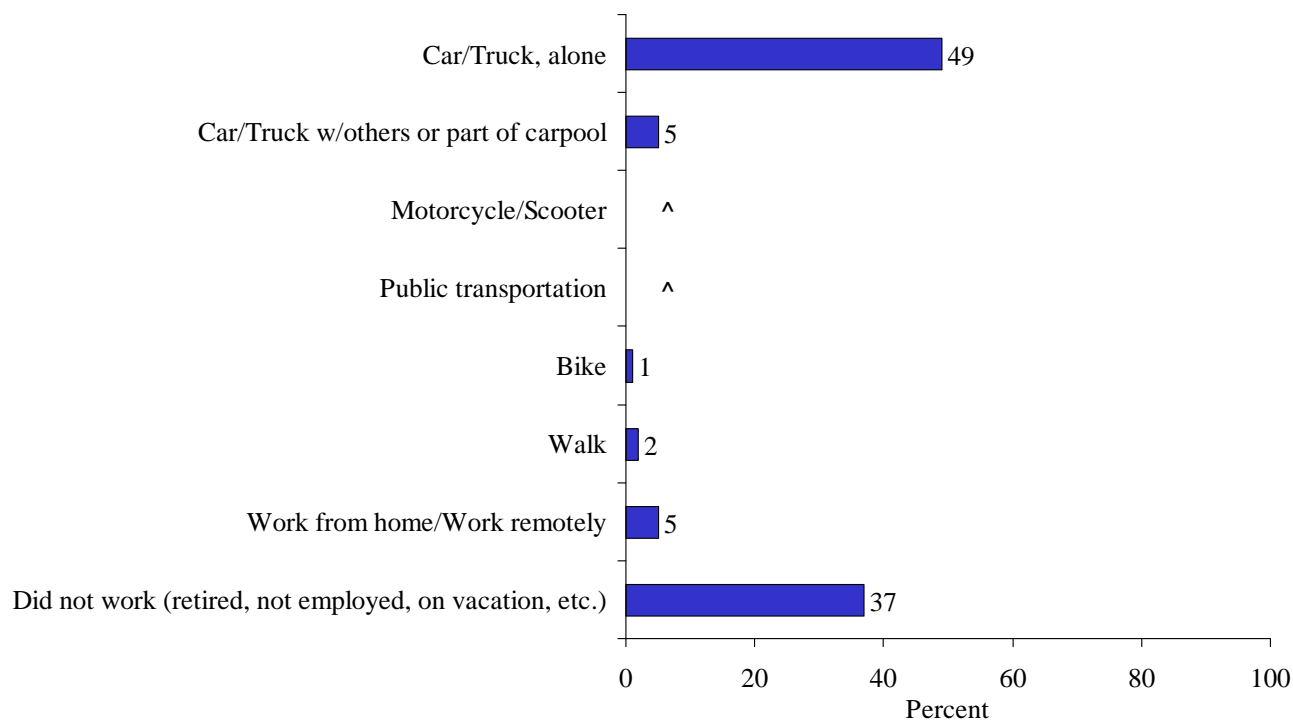
*In order to conserve fuel and save money, have you made any adjustments, modifications, or changes to how you use motorized transportation?*





# Typical Method of Transport

*How did you typically commute to work last week? Would you say...*

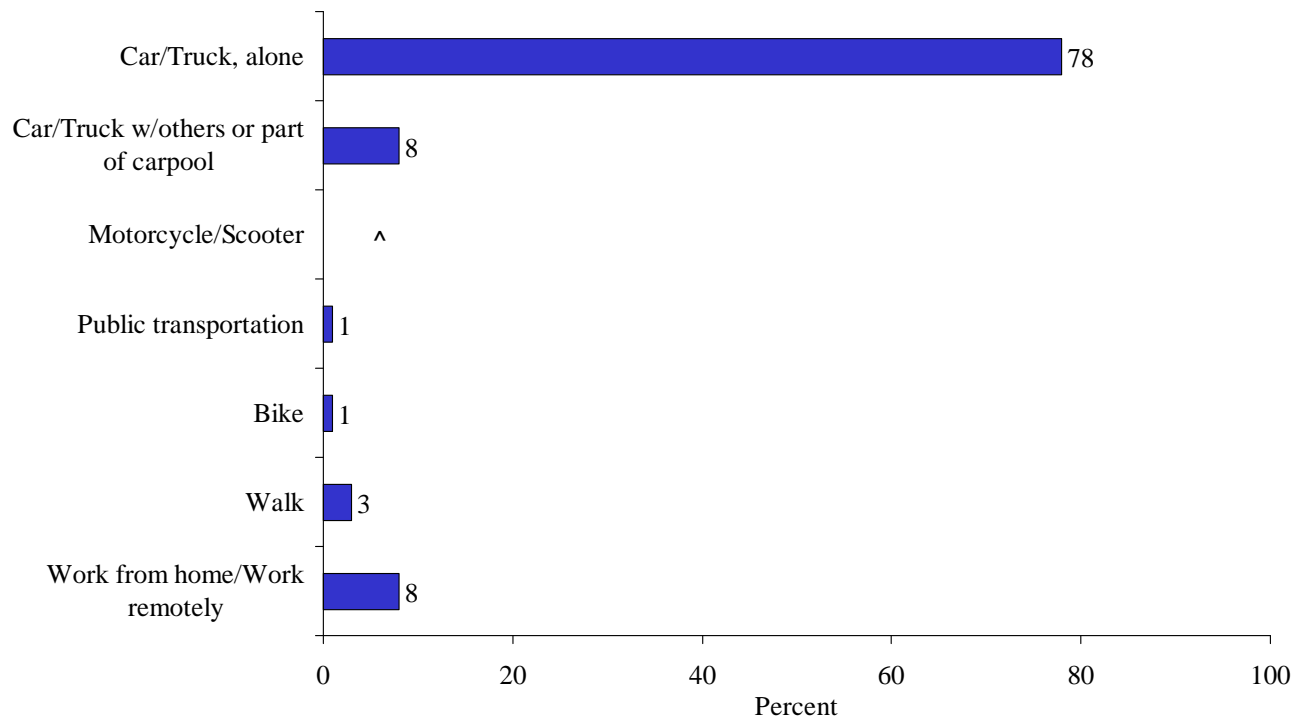


^ Denotes less than 1%.



# Typical Method of Transport, Among Those Who Are Employed Outside Home

*How did you typically commute to work last week? Would you say...*

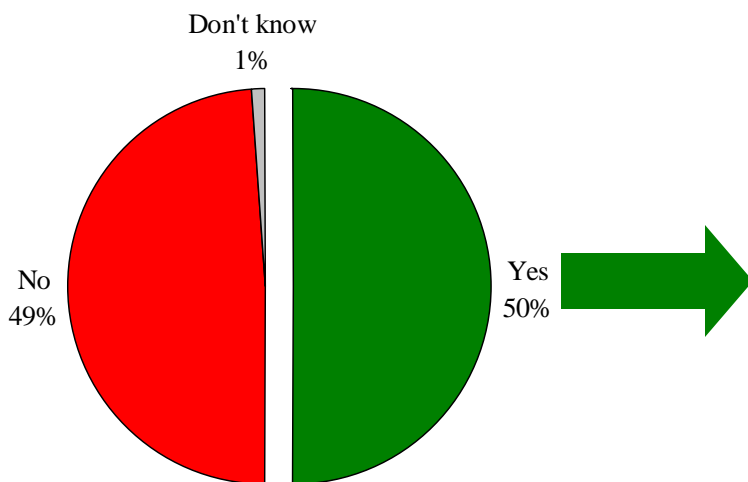


<sup>^</sup> Denotes less than 1%.



# Incidence of Making Energy-Driven Personal or Household Cutbacks

*Have high energy costs resulted in you making any cutbacks in other critical personal or household expenses?*



What kind of cutbacks are you making? *	n=1,617
Groceries	35%
Drive less often/Consolidate trips	20
Only buy necessities	17
Travel/Vacations	17
Dining/Restaurants	17
Eliminate or reduce other utility costs	16
Entertainment/Activities/Hobbies	15
Small cuts everywhere/More household budgeting	12

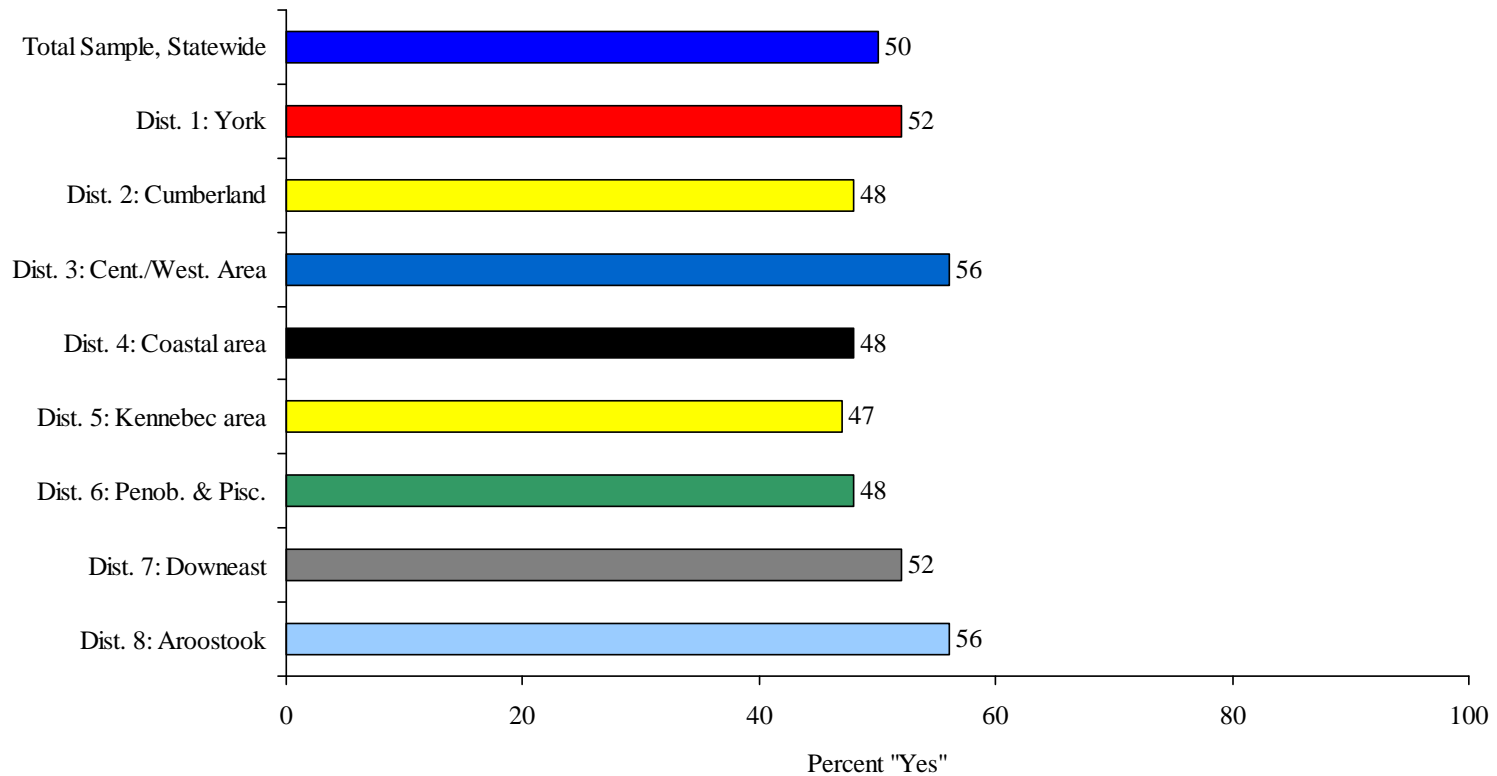
\* Based on respondents who indicated having made personal or household cutbacks.

Most common responses only shown; see Summary Tabulations for full accounting of responses.



# Incidence of Making Energy-Driven Personal or Household Cutbacks, By Public Health District

*Have high energy costs resulted in you making any cutbacks in other critical personal or household expenses?*





# Conclusions and Recommendations

- A significant number of Maine people either are or could be at risk from changing behaviors related to our residential energy;
- It is difficult to predict future patterns of societal behavior in this regard given the current uncertainties associated with the price and availability of gas and fuel oil;
- There should be continued tracking of key energy use indicators important to public health in Maine;
- There should be an emphasis on education and training programs, as well as the development of a public policy agenda, focused on the promotion of best practices in the field of residential energy.



# **Appendix: Sample Profile**



# County of Residence

In which county do you live?	Unweighted		Weighted	
	Sample Size	Percent	Sample Size	Percent
Androscoggin	224	7	265	8
Aroostook	400	13	182	6
Cumberland	400	13	611	19
Franklin	73	2	86	3
Hancock	254	8	175	5
Kennebec	269	8	275	9
Knox	113	4	109	3
Lincoln	97	3	93	3
Oxford	104	3	123	4
Penobscot	350	11	341	11
Piscataquis	51	2	50	2
Sagadahoc	97	3	93	3
Somerset	131	4	134	4
Waldo	95	3	91	3
Washington	146	5	100	3
York	400	13	476	15

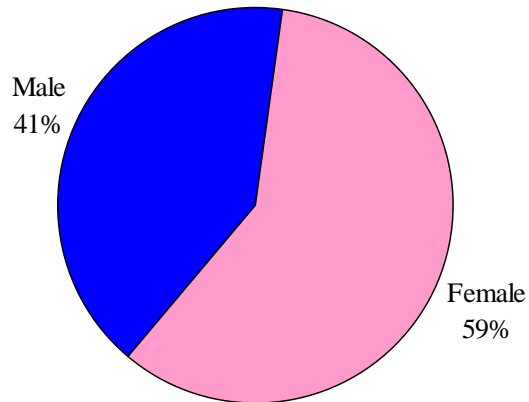


# Public Health District

Public Health District	Unweighted		Weighted	
	Sample (# of respondents)	Percent	Sample (# of respondents)	Percent
District 1 (York)	400	13	476	15
District 2 (Cumberland)	400	13	611	19
District 3 (Andro., Franklin, Oxford)	401	13	475	15
District 4 (Knox, Linc., Saga., Waldo)	402	13	386	12
District 5 (Kennebec, Somer.)	400	13	409	13
District 6 (Penob., Pisca.)	401	13	391	12
District 7 (Hancock, Wash.)	400	13	275	9
District 8 (Aroostook)	400	13	182	6



# Respondent Gender, Age and Ethnic Background



Into which of the following categories does your age fall?	%
18 to 34 years old	6
35 to 44 years old	14
45 to 54 years old	23
55 to 64 years old	27
65 years or older	30

Which of the following best matches your race or ethnic background?	%
White, Caucasian	97
Other	3
Don't know/Refused	1



# Household Composition

How many people – in total – live in your household?	%
1 person	19%
2 people	48
3 people	14
4 people	12
5 people	4
6 or more people	1

How many dependent children live in your household who are age 18 or younger?	%
None	74%
1 child	11
2 children	10
3 or more children	4

How many people live in your household who are age 65 or older?	%
None	64%
1 senior	21
2 seniors	15
3 or more seniors	^

^ Denotes less than 1%.



# Household Composition and Age Distribution of Children

How many dependent children live in your household who are age 18 or younger?	Overall %
None	74%
1 child	11
2 children	10
3 children	3
4 children	1
5 or more children	^

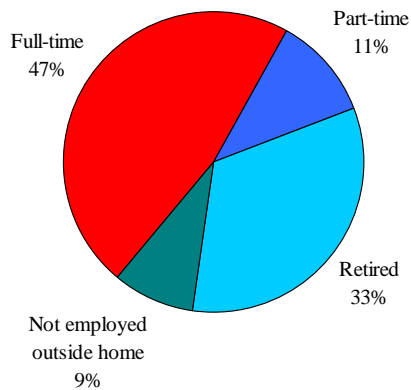
How many are between the ages of ...?	% of HH's w/ Children in Range
Age 4 or younger	31%
5 to 10	43%
11 to 15	42%
16 to 18	29%

^ Denotes less than 1%.

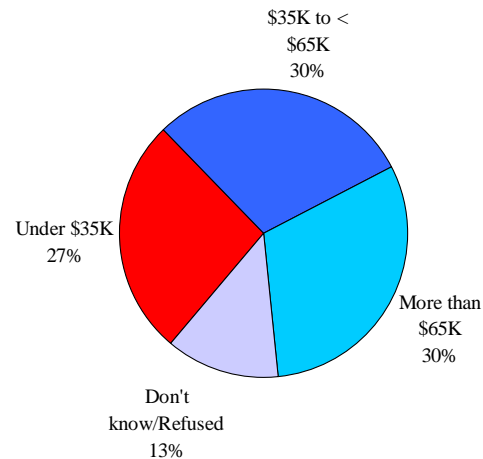


# Socio-Economic Indicators

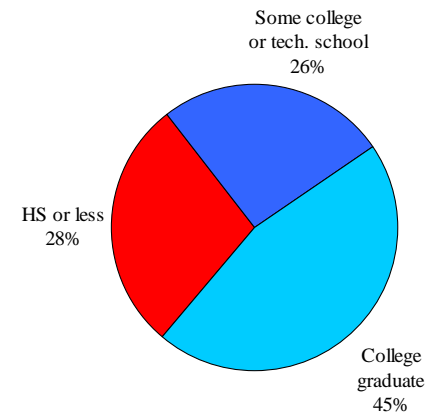
## Employment Status



## Total Household Income



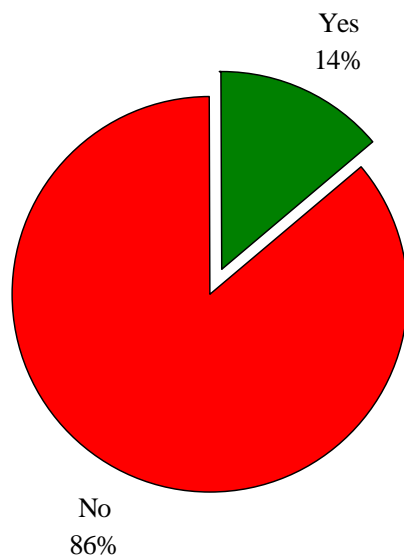
## Educational Attainment





# Clean Indoor Air Policy in Household

*In the past week, has anyone smoked inside your home?*



- Overall, only about 1-in-7 households polled allowed someone to smoke inside the home in the past week.
- Consistent with results from other population based health behavior surveys, incidence of household level smoking is correlated with income; as income rises, incidence of smoking inside the home decreases.