

**STATE OF MICHIGAN**

**BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION**

-----

In the matter, on the Commission's own	)	
motion, to review its response to the	)	
novel coronavirus (COVID-19) pandemic,	)	Case No. U-20757 (COVID-19)
including the statewide state of emergency	)	
and to provide guidance and direction to	)	
energy and telecommunications providers	)	
and other stakeholders	)	

**COMMENTS OF ROGER COLTON ON BEHALF OF  
THE CITIZENS UTILITY BOARD OF MICHIGAN (CUB)  
THE NATURAL RESOURCES DEFENSE COUNSEL (NRDC)  
AND THE NATIONAL HOUSING TRUST (NHT)**

**November 23, 2020**

These comments address the ongoing regulatory responses which the Michigan Public Service Commission (MPSC) should take in response to the COVID-19 pandemic. A growing number of voices today assert that the end of the pandemic can now be expected. Based on this belief, proposals are advanced that many of the consumer protections first adopted to respond to the pandemic can now be relaxed, if not completely abandoned.

These comments assert that the foundational assertions made in support of such action –to relax or abandon consumer nonpayment protections, particularly for low-income consumers—are misplaced. The comments below are presented in four parts:

- Part 1 documents how the COVID-19 pandemic has resulted in particularly disproportionate adverse health *and economic* impacts on low-income households. As a result of these disproportionate impacts, low-income households are, today, in even greater jeopardy of nonpayment than they have historically been. Part 1 further documents how, and why, not only will the economic consequences of COVID-19 continue for the foreseeable future, but also how and why those economic consequences may grow worse long before they may grow better.
- Part 2 asserts that inability-to-pay during the COVID-19 economic crisis will turn primarily on unaffordable bill burdens (i.e., bills as a percentage of income). Part 2 examines extensive empirical data affecting low-income bill burdens. It concludes that across-the-board regulatory responses which treat low-income households as though they represent a single, homogenous population of customers, will not be well-designed to respond to the economic crisis that will continue to face Michigan’s low-income customers and the utilities that serve those customers.
- Part 3 proposes a four-part regulatory response that the Michigan PSC should adopt to respond to the current and future economic consequences that have been created by, or certainly exacerbated by (as shown in Part 1) by the COVID-19 pandemic.
- Part 4 examines three customer service protections that should be implemented and continued during the pendency of the economic crisis associated with the COVID-19 pandemic.

## **PART 1. DISPROPORTIONATE IMPACT OF COVID-19 ON LOW-INCOME**

The disproportionate impacts of COVID-19 should be specifically considered in addressing appropriate state responses to COVID-19 in Michigan. As of November 11, 2020, Michigan had

229,285 confirmed COVID-19 cases. At that same time, the State had 7,766 COVID-19 related deaths, with a case fatality rate of 3.4%.<sup>1</sup>

This first section explains how and why the utility industry will not escape the economic impacts of the COVID-19 pandemic affecting Michigan and the rest of the nation. That population which has the least ability to respond to the economic catastrophe caused by COVID-19 is the same population that is being hardest hit with the public health and economic consequences. The economic hardship is not simply caused by the loss of jobs, though that is a major part of it. The hardship is also caused by the loss of income, which includes a reduction of hours, and a reduction of work-related income. Since lower-income, low-wage employees also are the least likely to have paid leave time, not only personal illness, but also family illness requiring workers to take time off to be caretakers, suffer adverse economic impacts.

This section documents the substantial research which shows that one consequence of these economic harms is the inability to pay monthly bills, including utility bills. National research quantifies the inability to pay utility bills in particular. While similar state-level research relating only to utility bills has not been performed in Michigan, the corresponding research (inability-to-pay “housing” bills) has been performed in Michigan, and supports the applicability of the national conclusions to Michigan. Due to the nature of low wage employment, these customers find it difficult, if not impossible, to avoid the bill payment problems that have arisen due to COVID-19.

Michigan should also be cognizant of the clear racial implications of the conclusions reached above. In Michigan, as elsewhere, COVID-19 has a disparately adverse impact on population demarcated by race. In particular, not only is a higher proportion of Michigan’s Black population getting sick, but, in addition, a higher proportion of Michigan’s Black population is dying as a result of COVID-19, than is warranted by the percentage of Black individuals in the population as a whole.

### ***Disproportionate COVID-19 Impact to Low-Income Populations***

While the COVID-19 pandemic is obviously a critical public health crisis to the general population, it presents a *particular* health and economic crisis to low-income households and to the working poor. The discussion below is based on the U.S. Census Bureau’s “Household Pulse Survey.” The Pulse Survey was designed to quickly and efficiently deploy data collected on how peoples’ lives have been affected by the COVID-19 pandemic. According to the Census Bureau, data collection for the Household Pulse Survey began on April 23, 2020. The Census Bureau expected to collect data for 90 days, and to release data on a weekly basis. The data discussed below is from Week 12 of the Pulse Survey, for the week of July 16 through July 21 (released on

---

<sup>1</sup> [https://www.michigan.gov/coronavirus/0,9753,7-406-98163\\_98173---,00.html](https://www.michigan.gov/coronavirus/0,9753,7-406-98163_98173---,00.html) (last accessed November 12, 2020).

July 29, 200).<sup>2</sup> That week of the Pulse Survey was the last week. On August 7, 2020, the Census Bureau decided to begin a “Phase II” of the Pulse Survey at an undesignated future date.

### **Income Insecurity Due to Job Loss or Income Reductions**

Two different aspects of the COVID-19 impact on lower-income households are considered below: (1) employment; and (2) housing security. The Table immediately below documents the disproportionate adverse impact that COVID-19 has had on low wage employment in Michigan. Based on the most recent Census Pulse Survey data, employees with incomes less than \$75,000 in Michigan have had a substantially greater adverse impact on both “experienced loss of employment income” and “expected loss of employment income” than higher income workers.

Table 1. Experienced and Expected Loss of Employment Income by Income  
Week 12 (July 16 – 21) Household Pulse Survey (Michigan)

	<i>Total</i>	Experienced loss of employment income since March 13, 2020 (for self or household member)		Expected loss of employment income in next 4-weeks (for self or household member)		Percent Yes	
		Yes	No	Yes	No	Experienced Loss	Expected Loss
Less than \$25,000	1,205,264	691,315	512,353	435,603	768,244	57.4%	36.1%
\$25,000 - \$34,999	674,169	446,831	227,337	387,872	286,297	66.3%	57.5%
\$35,000 - \$49,999	792,428	446,151	346,277	195,904	593,748	56.3%	24.7%
\$50,000 - \$74,999	1,422,107	751,159	647,217	509,176	912,932	52.8%	35.8%
\$75,000 - \$99,999	893,033	429,382	463,651	268,055	624,978	48.1%	30.0%
\$100,000 - \$149,999	790,607	421,640	368,967	165,922	624,685	53.3%	21.0%
\$150,000 - \$199,999	504,899	225,138	279,761	161,191	343,707	44.6%	31.9%
\$200,000 and above	280,491	138,769	141,722	76,660	203,831	49.5%	27.3%

There is substantial research that explains this disproportionate adverse impact on lower income workers. As of mid-March, more than 90 percent of the jobs lost were in low-wage industries, particularly in the accommodations and food services industries.<sup>3</sup> The loss of income, however, is not limited exclusively to the loss of employment. As the Urban Institute reports, based on its

<sup>2</sup> Available at <https://www.census.gov/data/tables/2020/demo/hhp/hhp12.html> (last accessed November 11, 2020).

<sup>3</sup> Boushey and Park (April 2020). The corona virus recession and economic inequality, at 13, Washington Center for Equitable Growth (available at <https://equitablegrowth.org/the-coronavirus-recession-and-economic-inequality-a-roadmap-to-recovery-and-long-term-structural-change/>, November 11, 2020), citing U.S. Bureau of Labor Statistics, “Current Employment Statistics Highlights (2020), available at [www.bls.gov/web/empsit/ceshighlights.pdf](http://www.bls.gov/web/empsit/ceshighlights.pdf) (last accessed November 11, 2020).

Health Reform Monitoring Survey (HRMS), conducted between March 25 and April 10, 2020, the health pandemic also results in a reduction in work hours even if jobs remain:

Though the rise in unemployment insurance claims suggests the unemployment rate has soared over the past month, the official rate will likely understate the negative effects of the pandemic on families, because it will not account for reductions in work hours or work-related income (e.g., reduced business income) that are not connected to job losses. . .[W]e find that 41.5 percent of nonelderly adults reported that the coronavirus outbreak has had one or more of the following effects on their work or the work of someone in their family: losing or being laid off from a job (17.1 percent), being furloughed or having work hours reduced (28.8 percent), or losing earnings or income from a job or business (27.8 percent).<sup>4</sup>

According to the Urban Institute, “[t]he finding that about 4 in 10 adults were in families that lost work or work-related income is consistent with results from recent surveys and polls conducted by the Henry J. Kaiser Family Foundation (March 25–30), Pew Research Center (April 7–12), and Monmouth University Polling Institute (April 3–7).”<sup>5</sup> The Urban Institute’s research, supported by the Robert Wood Johnson Foundation, reported further that:

About half of adults in families with incomes at or below poverty (51.1 percent) or between 100 and 250 percent of FPL (49.0 percent) reported that their families lost jobs, work hours, or work-related incomes because of the coronavirus outbreak [...]. In contrast, just under one-third (32.2 percent) of adults in families with incomes at or above 400 percent of FPL reported job or income losses because of the outbreak.<sup>6</sup>

These numbers are consistent throughout research performed nationwide. The Pew Research Center, one of the nation’s most respected research centers, *also* reported that:

---

<sup>4</sup> Karpman et al. (April 2020). The COVID-19 Pandemic is Straining Families’ Abilities to Afford Basic Needs, at 5, Urban Institute Health Policy Center: Washington D.C., available at <https://www.urban.org/research/publication/covid-19-pandemic-straining-families-abilities-afford-basic-needs> (last accessed November 11, 2020).

<sup>5</sup> Ashley Kirzinger, Audrey Kearney, Liz Hamel, and Mollyann Brodie, “KFF Health Tracking Poll – Early April 2020: The Impact of Coronavirus on Life in America,” Henry J. Kaiser Family Foundation, April 2, 2020, <https://www.kff.org/health-reform/report/kff-health-tracking-poll-early-april-2020/>; Kim Parker, Juliana Menasce Horowitz, and Anna Brown, “About Half of Lower-Income Americans Report Household Job or Wage Loss Due to COVID-19,” Pew Research Center, April 21, 2020, <https://www.pewsocialtrends.org/2020/04/21/about-half-of-lower-income-americans-report-household-job-or-wage-loss-due-to-COVID-19/>; “COVID-19 Impact on Daily Life Heightens,” Monmouth University Polling Institute, April 13, 2020, [https://www.monmouth.edu/polling-institute/reports/monmouthpoll\\_us\\_041320/](https://www.monmouth.edu/polling-institute/reports/monmouthpoll_us_041320/). (last accessed November 11, 2020).

<sup>6</sup> Id., at 6.

lower-income adults are more likely than middle- and upper-income adults to say they've experienced significant job disruption due to the coronavirus outbreak. About half of lower-income adults (52%) say they or someone in their household has lost a job or taken a cut in pay due to the outbreak. This compares with 42% of middle-income and 32% of upper-income adults.<sup>7</sup>

The Pew data is set forth in the Table below.

	Been laid off / lost job	Had to take cut in pay	Net either / both
Upper income	18%	26%	32%
Middle income	26%	32%	42%
Lower income	39%	41%	52%

### **Identifying the Reason for Disproportionate Income Insecurity**

One reason why low wage workers are so adversely affected is because workers with incomes below Poverty Level are far less likely to report being able to work from home than the highest-income group of workers (17.1% versus 54.6%).<sup>8</sup> Just under one-third of American workers stated that they could work from home - including those workers who were simply bringing their work home with them - according to the American Time Use Survey.<sup>9</sup> Even fewer workers—just 12%—actually did work from home at least once per month.<sup>10</sup> These numbers are far lower for those in the bottom quartile of workers: only 9% could work from home, and just 1% worked from home at least once per month.<sup>11</sup> Most workers do not have access to a flexible workplace that would permit them to work an agreed-upon portion of their schedule at home, but those in the bottom 10% of income are the least likely while the highest-paid workers are the most likely.

<sup>7</sup> Parker, Horowitz and Brown (April 21, 2020). "About Half of Lower-Income Americans Report Household Job or Wage Loss Due to COVID-19," at 7, Pew Research Center: Washington D.C. , available at <https://www.pewsocialtrends.org/2020/04/21/about-half-of-lower-income-americans-report-household-job-or-wage-loss-due-to-covid-19/> (last accessed November 11, 2020).

<sup>8</sup> Urban Institute, at 7.

<sup>9</sup> Table 1. Workers Who Could Work at Home, Did Work at Home, and Were Paid for Work at Home, by Selected Characteristics, Averages for the Period 2017-2018. U.S. Bureau of Labor Statistics, U.S. Bureau of Labor Statistics, 24 Sept. 2019, available at: [www.bls.gov/news.release/flex2.t01.htm](http://www.bls.gov/news.release/flex2.t01.htm). (last accessed November 11, 2020).

<sup>10</sup> Guyot, Katherine, and Isabel V. Sawhill. "Telecommuting Will Likely Continue Long after the Pandemic." Brookings Institution, 6 Apr. 2020, available at: [www.brookings.edu/blog/up-front/2020/04/06/telecommuting-will-likely-continue-long-after-the-pandemic/](http://www.brookings.edu/blog/up-front/2020/04/06/telecommuting-will-likely-continue-long-after-the-pandemic/) (last accessed November 11, 2020).

<sup>11</sup> Id.

Loss of income arises, too, when the families of low-wage workers fall ill. Low-wage workers tend not to have paid leave, including paid sick leave, personal leave or paid “vacation” time. Accordingly, when household members become ill, requiring caretakers to take time off, these households permanently lose income. Fewer than one-third of low-income workers have access to paid leave at their place of work, as compared to 94% of those in the top 10% of income.

This disproportionate exposure to becoming ill is not theoretical. It is well-established that those low-wage workers who do remain employed will likely be employed in high-risk jobs. Common occupations for low-wage workers include cashiers and retail salespersons, people who re-stock retail establishments and/or prepare orders for fulfillment, and others who have constant, close contact with the public (e.g., delivery people, drivers/truck drivers). Following the Bureau of Labor Statistics’ National Compensation Survey, service occupations include health care support, protective service, food preparation, building and grounds, cleaning and maintenance, and personal care. These workers are at risk of exposure to the coronavirus due to the inherent person-to-person nature of their work, which also makes it nearly impossible for these service occupation employees to work from home. In 2019, just 1% of all workers in service occupations had access to a flexible workplace, which would allow them to complete their work at home or at an approved alternative location. As the vice-chair of the Congressional Joint Economic Committee noted, “without options for paid sick leave and working from home, workers in the service occupations are at risk of contracting and spreading the virus from sick co-workers and customers, and of bringing it home to their families.”<sup>12</sup>

As the health impacts of COVID-19 disproportionately spread in the low-income population, so, too, do the adverse economic impacts disproportionately spread amongst the poor. In addition to those actually becoming ill, the people who are most severely economically disadvantaged by COVID-19 from becoming ill involve low-income households. Most low-wage workers lack paid benefits such as health insurance. According to the U.S. Bureau of Labor Statistics, only 24% of workers in the private sector in the lowest 10% wage category had access to employer-sponsored health care plans in 2019.<sup>13</sup> Moreover, COVID-19 is making this situation worse. In March-April 2020, 9.2 million workers may have lost their employer-provided health insurance as a result of COVID-19, with those losses highly concentrated in the accommodation and food services industry.<sup>14</sup>

---

<sup>12</sup> Congressman Don Beyer, Vice Chair, Congressional Joint Economic Committee, The Impact of Corona Virus on the Working Poor and People of Color, at 4, available at: <https://www.jec.senate.gov/public/cache/files/bbaf9c9f-1a8c-45b3-816c-1415a2c1ffee/coronavirus-race-and-class-jec-final.pdf> (last accessed November 11, 2020).

<sup>13</sup> Employee Benefits in the United States, March 2019. U.S. Bureau of Labor Statistics, National Compensation Survey (NCS) 2019. available at: <https://www.bls.gov/ncs/ebs/benefits/2019/employee-benefits-in-the-united-states-march-2019.pdf> (last accessed November 11, 2020).

<sup>14</sup> Economic Policy Institute (April 16, 2020) (updated May 14, 2020). 9.2 million workers likely lost their employer-provided health insurance in the past four weeks, available at: <https://www.epi.org/blog/9-2-million->

## *The Impact of Income Insecurity on Utility Bill Payment*

It is possible to quantify the extent to which the income loss discussed above, whether due to lost jobs or reduced incomes, affects a household's ability-to-pay utility bills. The Urban Institute, previously cited, examined the growth in "material hardships" attributable to COVID-19. The Urban Institute:

define[s] [a material hardship as] being unable to pay their rent or mortgage, being unable to pay utility bills, reporting house-hold food insecurity, or having someone in the family go without medical care because of the cost. As noted, 31.0 percent of all adults and 42.0 percent of adults in families experiencing a loss of work or work-related income because of the pandemic reported that their families faced at least one type of hardship in the month before they completed the survey. This included 8.1 percent of adults whose households did not pay the full amount of the rent or mortgage or were late with such a payment; 10.3 percent who did not pay gas, oil, or electricity bills; 21.9 percent reporting household food insecurity; and 15.6 percent with unmet needs for medical care. These estimates likely understate housing hardship, because about three-quarters of respondents completed the survey before rent was due on April 1.

Among adults in families that lost work or work-related income, the shares reporting each type of hardship were significantly higher than such shares among adults in families that have not lost work or income. Nearly one in three (29.6 percent) adults in families that lost work or income reported food insecurity for their household in the last 30 days, nearly twice the share of adults in families not losing work or income who reported food insecurity (16.3 percent). Food insecurity was the most commonly reported hardship among all adults and those in families that lost work or income, and that food insecurity occurred during a period when people were being encouraged to stock up on food and limit trips to grocery stores.

\* \* \*

The share of adults reporting hardship falls sharply as family income increases: whereas more than two-thirds (68.6 percent) of adults with family incomes at or

---

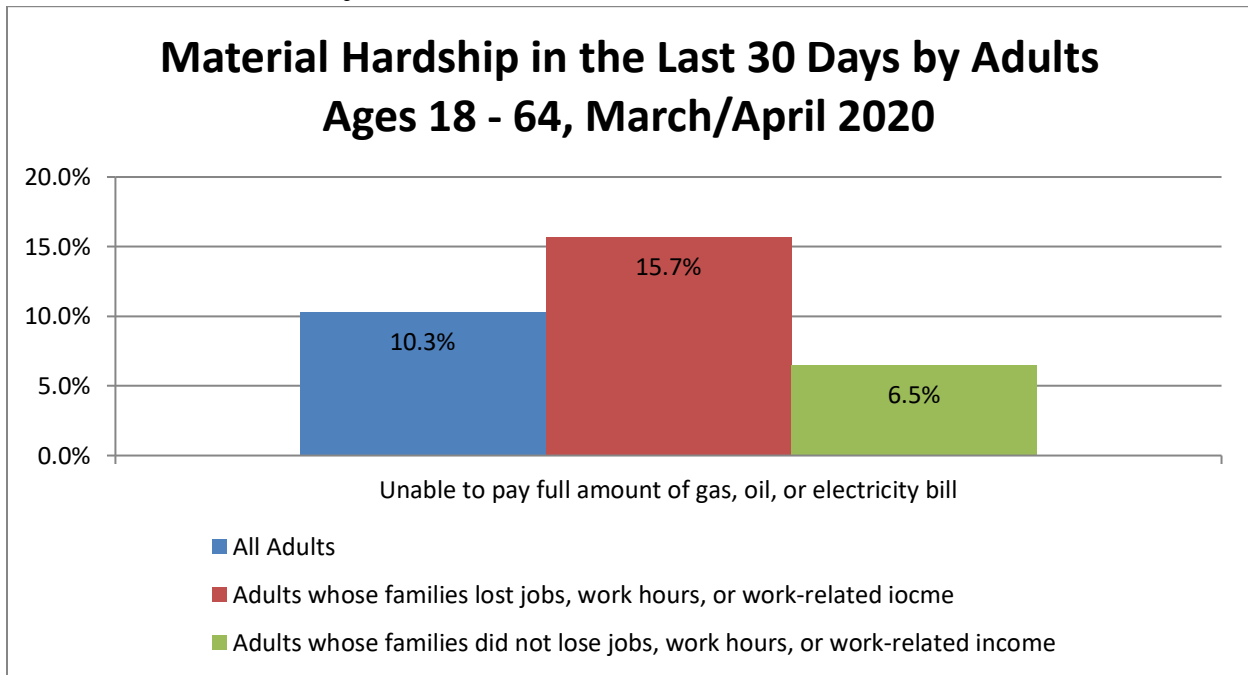
[workers-likely-lost-their-employer-provided-health-insurance-in-the-past-four-weeks/](#) (last accessed November 11, 2020).



below poverty reported one or more hardships, 10.7 percent of adults with incomes at or above 400 percent of FPL reported hardship.<sup>15</sup>

### **A National Overview**

Not surprisingly, the burden of material hardships attributable to COVID-19 fell hardest on adults whose families lost jobs, work hours, or work-related income.



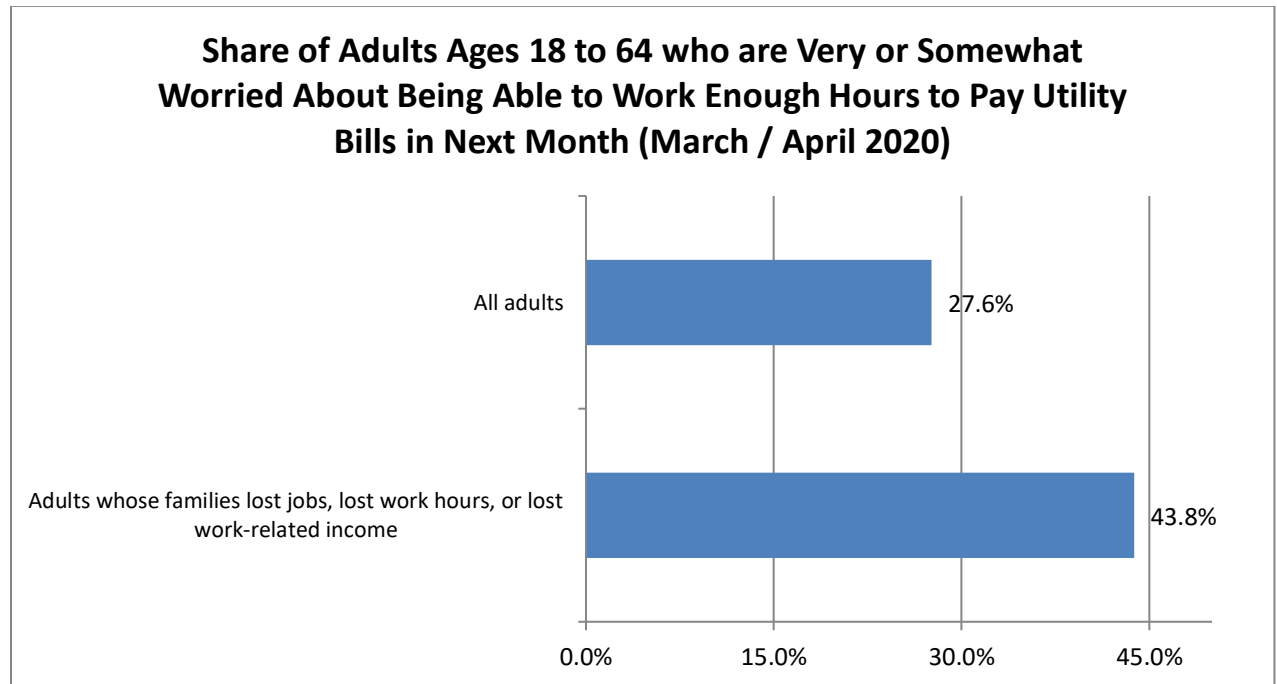
As noted above, there is a substantial overlap between those adults and households who lost jobs or income and those households with lower income with which to begin. The Urban Institute further found the burden of increased material hardship fell overwhelmingly on the poor. With unpaid utility bills in particular, while 27.5% of consumers with income less than 100% of Poverty were unable to pay home energy bills, only 8.2% of families with income between 250% and 400% of Poverty, and only 2.6% of families with income greater than 400% of Poverty, were unable to do so.

<sup>15</sup> Urban Institute, *supra*, at 10, 11.

	Family Income			
	At or below 100% FPL	100 – 250% FPL	250 – 400% FPL	400% FPL or more
Unable to pay full amount of gas, oil or electricity bills	27.5%	13.9%	8.2%	2.6%

It is not simply the fact that they had been unable to pay the full amount of their home energy bill in the past 30 days that is of concern, however. “Among adults in families that lost work or income,” the Urban Institute found, over half (50.6 percent) were “*worried about* being able to pay debts, and many also worried about being able to pay. . . utility bills (43.8 percent). . . *in the next month*. These data suggest that in addition to those who have already had problems paying their bills, a large share of adults in families losing work or income were *newly* at risk of falling behind on the rent, mortgage, or utility bills. . .”<sup>16</sup> (emphasis added).

There can be little question but that households who *can* pay make every effort to pay. The discussion above presented data on the percentage of households who have failed to make utility bill payments. In addition, that same study documented the percentage of households who *worry* about their ability to work sufficient hours to be able to pay their utility bills each month.<sup>17</sup>



<sup>16</sup> Urban Institute, supra, at 14.

<sup>17</sup> Urban Institute, supra, at 14.

As can be seen, customers are aware of their payment obligations, and have sufficient intent to pay those obligations that they are “very or somewhat worried about” whether their household will have sufficient resources to make those payments. Sending a shutoff notice, as well as actually disconnecting service, does not generate the additional income to address those worries.

The problems identified above arise despite the fact that customers choose to pay their utility bills during the pandemic, where possible, even if that payment is at the cost of *not* paying for food and/or shelter. The Urban Institute study, previously cited, illuminates the choices that households are being forced to make in today’s COVID-19 pandemic world. The Chart immediately below shows those choices that people are making. As documented above, one-in-six (15.7%) of adults are unable to pay their home energy bills when they lost jobs, or suffered lost work hours or reductions in work-related income. That number, however, does not tell the full story. Nearly one-in-three (29.6%) of adults who lost jobs/income experienced food insecurity, while nearly one-in-four (22.5%) were unable to receive medical care for someone in their family because of cost. There are, in other words, people who are choosing to pay their utility bills before they are buying food or obtaining health care in the midst of the worst public health crisis in more than 100 years.

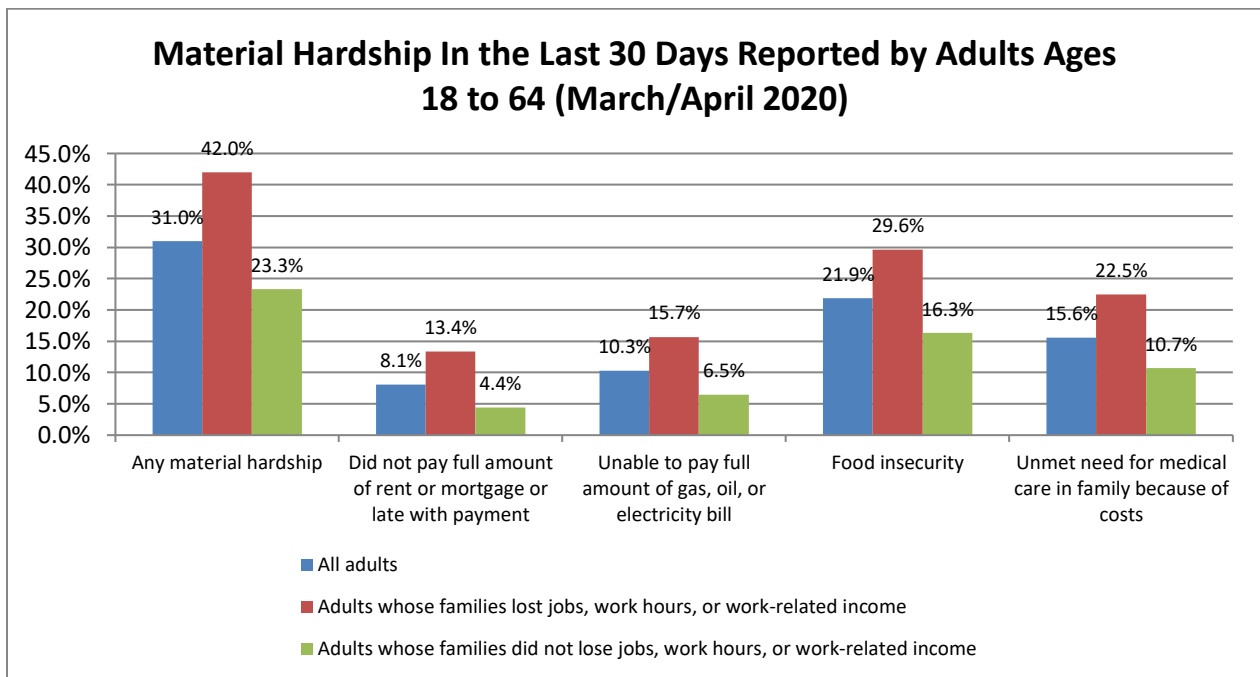


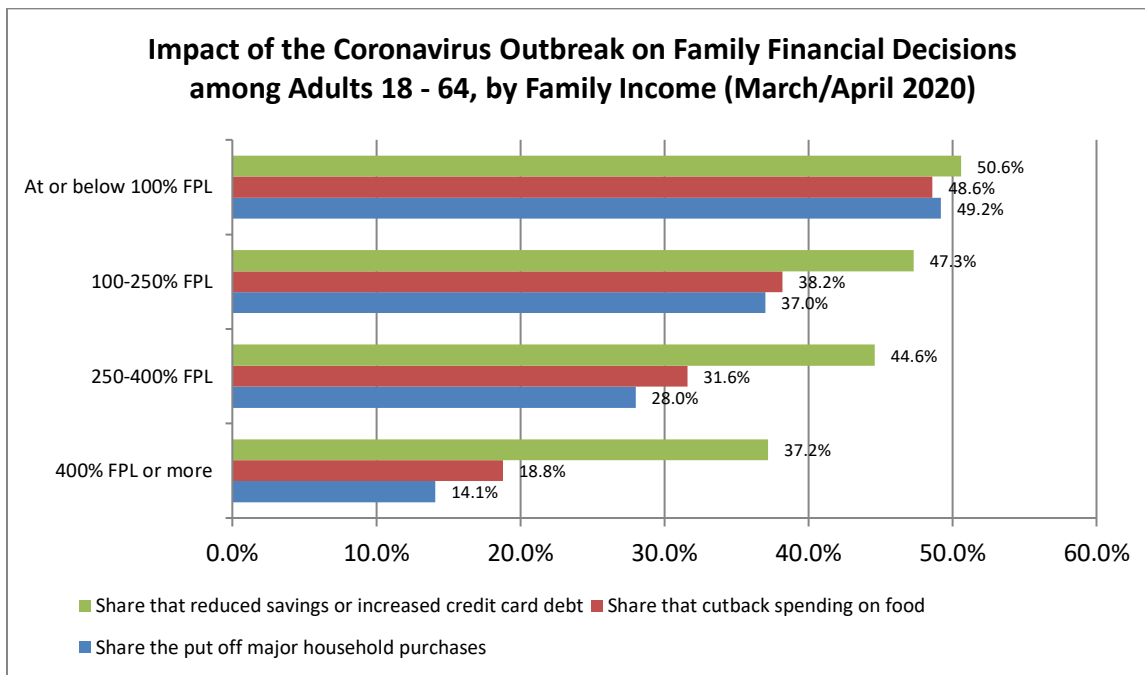
Table 4 below shows that these choices are exacerbated at the lowest income levels. More than one-in-four adults with income at or below 100% of Poverty could not pay their home energy bills in the past 30 days (March/April 2020). Even as income increased to between 100% and 250% of Poverty, one-in-seven (13.9%) could not pay their home energy bills. At all income levels, the Table shows, adults were choosing to pay their home energy bills before buying food or accessing medical care during this pandemic.

**Table 4. Material Hardship in the Last 30 Days Reported by Adults Age 18 to 64 by Family Income (March/April 2020)**

By Family Income

	At or below 100% FPL	100-250% FPL	250-400% FPL	400% FPL or more
Any material hardship %	68.6%	42.8%	28.3%	10.7%
Did not pay full amount of rent or mortgage or late with payment	21.7%	10.8%	6.2%	2.2%
Unable to pay full amount of gas, oil or electricity bills	27.5%	13.9%	8.2%	2.6%
Food insecurity	57.5%	31.0%	17.9%	4.6%
Unmet need for medical care in family because of costs	29.4%	22.3%	14.9%	6.4%

Finally, the Chart below shows that people are not simply refusing to pay (or ignoring) their home energy bills. At every income level, adults are reducing their savings or increasing their credit card debt to make their payments. These adults, however, particularly those at the lowest income levels, simply do not have sufficient resources to be able to continue months-on-end having lost their jobs, lost work hours, or suffered the loss of work-related income.



**Michigan-Specific Data on Shelter Insecurity**

Even though there is no Michigan-specific research on utility bills, there is relevant data that leads to the conclusions that these problems exist in Michigan as well. The Table below shows

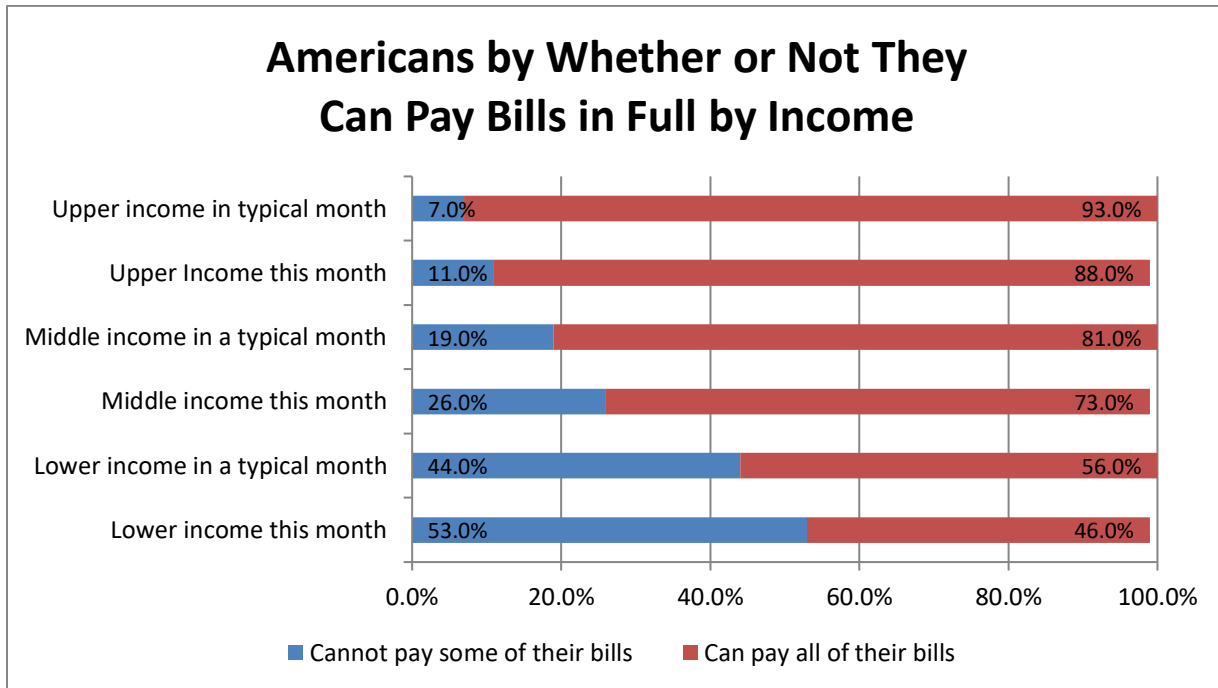
the confidence which Michigan residents reported having in being able to make their mortgage or rental payment in the coming month, disaggregated by household income. Included is the data for “no confidence,” “slight confidence” and “high confidence” in being able to make those housing payments.

As can be seen, the Michigan data tell a story consistent with the national data. With housing payments, particularly for renters, lower incomes are generally associated with lower levels of confidence. While 36% of households with income less than \$25,000 had either no confidence or slight confidence in their ability to make next month’s rent payment, and nearly 20% of households with income between \$25,000 and \$50,000 had these low confidence levels, no-one with income of \$75,000 or more had “no confidence” in their ability to pay their rent. Setting aside the data for adults at \$100,000 to \$150,000 of income, fewer higher income households had only “slight confidence” in their ability to meet next month’s rent payment.

The same income-based differentiation is seen with “high confidence.” For both mortgage and rental payments, high degrees of “high confidence” in being able to make housing payments in the next month were associated with higher incomes, while substantially lower degrees of “high confidence” were found in the lower incomes. Again, setting aside the aberrational data for \$100,000 to \$150,000 incomes, the percentage of higher income households having a “high confidence” in their ability to make next month’s rent payment was between 90% and 100%. In contrast, only 40% or less of respondents with income less than \$35,000 had a “high confidence” in their ability to pay their rent.

	Confidence Able to Mortgage Next Month			Confidence Able to Pay Rent Next Month		
	None	Slight	High	None	Slight	High
Less than \$25,000	5%	6%	16%	11%	25%	39%
\$25,000 - \$34,999	0%	3%	35%	3%	18%	40%
\$35,000 - \$49,999	1%	4%	20%	12%	7%	59%
\$50,000 - \$74,999	2%	13%	34%	4%	10%	47%
\$75,000 - \$99,999	6%	7%	51%	0%	0%	89%
\$100,000 - \$149,999	3%	3%	62%	0%	36%	46%
\$150,000 - \$199,999	0%	10%	71%	0%	5%	93%
\$200,000 and above	1%	1%	67%	0%	0%	100%

This Michigan data is consistent with national data.<sup>18</sup> In the Chart below, the shares who say they cannot pay some bills include those who say they can only make partial payment on some of them. While all income levels have seen an increase in the share of bills they cannot pay “this month” (i.e., during COVID-19), the increase in the lower-income population is considerable, and reaches more than half (53%) of the low-income population.



***Disproportionate Impacts by Race.***

In addition to the disproportionate adverse impact by income, COVID-19 has a disproportionate impact by race as well. The American Medical Association (AMA) was unequivocal in its findings: “. . . Black Americans have been among the hardest hit populations by the virus. Not only are they hospitalized and dying in disproportionate numbers, they also are more likely than White Americans to have lost income because of the pandemic. The latest data from the COVID Racial Tracker shows that while Black Americans account for 13 percent of the U.S. population, they account for 24 percent of the deaths where race is known: this means Black people are dying at a rate nearly two times higher than their population share.”<sup>19</sup>

<sup>18</sup> Pew Research Center, supra, at 10.

<sup>19</sup> Statement of the American Medical Association to the U.S. House of Representatives Committee on the Budget (June 23, 2020). Re. Health and Wealth Inequality in America: How COVID-19 Makes Clear the Need for Change, at 1. available at <https://searchf.ama-assn.org/undefined/documentDownload?uri=%2Funstructured%2Fbinary%2Fletter%2FLETTERS%2F2020-6-22-Written-statement-for-Budget-C-Hearing-final.pdf> (last accessed November 11, 2020).

According to the AMA: “An April 2020 report from the Centers for Disease Prevention and Control (CDC) found that 33 percent of hospitalized patients with COVID-19 were Black, despite only comprising 18 percent of the community being evaluated, while amfAR, the Foundation for AIDS, found that 22 percent of US counties are disproportionately Black and those counties account for 52 percent of COVID-19 infections and 58 percent of COVID-19 deaths.”<sup>20</sup> The AMA concluded: “. . .Black Americans are dying at nearly two times their national population share, and in five out of the six counties with the highest death rates, Black Americans are the largest racial group.”<sup>21</sup>

This data is available to Michigan. According to the Michigan COVID-19 dashboard (last updated November 11, 2020) (as of the date of the writing of these comments), Black and multi-racial individuals represent 58.6% of all Michigan COVID-19 cases;<sup>22</sup> Black or multi-racial individuals represent 35.7% of the state’s total COVID-19 deaths. In contrast, as of July 1, 2019, Black individuals represent only 14.1% of the state’s total population (multi-racial individuals represent an additional 2.5%).<sup>23</sup> Not only is a disproportionate percentage of Michigan’s Black population getting sick with COVID-19, in other words, a disproportionate share of Michigan’s Black population is also dying from COVID-19.

### ***The Expectation of Long-Term Economic Consequences from COVID-19***

The COVID-19 pandemic imposes two distinctly different crises to the State of Michigan. On the one hand, there is the public health crisis. On the other hand, however, there is also the associated economic crisis. The economic impacts of the COVID-19 pandemic may persist for years to come and the regulatory response to this economic crisis must take this long-term nature into account.

### **Separating the Economic Crisis from the Public Health Crisis**

It should be recognized that the economic crisis which is associated with the COVID-19 pandemic will not be resolved when there is a publicly available vaccine. The economic impacts will result in a long-term economic disruption for Michigan’s customers. As a result, while

---

<sup>20</sup> Id.

<sup>21</sup>Statement of the American Medical Association to the U.S. House of Representatives Committee on Ways and Means (June 8, 2020). Re. The Disproportionate Impact of COVID-19 on Communities of Color, available at: <https://searchlf.ama-assn.org/undefined/documentDownload?uri=%2Funstructured%2Fbinary%2Fletter%2FLETTERS%2F2020-6-8-AMA-Statement-For-the-Record-on-Racial-Disparity-Hearing.pdf> (last accessed November 11, 2020).

<sup>22</sup> Where we stand with COVID-19, [https://www.michigan.gov/coronavirus/?utm\\_source=google&utm\\_medium=cpc&utm\\_campaign=covid20](https://www.michigan.gov/coronavirus/?utm_source=google&utm_medium=cpc&utm_campaign=covid20) (last accessed November 11, 2020).

<sup>23</sup><https://www.census.gov/quickfacts/MI> (last accessed November 11, 2020).

some responsive actions may be sustained simply during the public health crisis, and for a short period thereafter, other responsive actions will need to be maintained for the foreseeable future.

**Long-Term Job Loss:** The public availability of a COVID-19 vaccine will not end the economic crisis facing low-income customers. One analysis by the Center on Poverty and Social Policy at Columbia University projects the longer-term effects of the COVID-19 economic crisis.<sup>24</sup> The Columbia University research center forecasted poverty rates under three alternative unemployment scenarios: 10 percent; 20 percent, and 30 percent. The Center assumed that such high levels of unemployment lasted for two different scenarios: (1) one quarter, and (2) one year. The Center uses the “Supplemental Poverty Measure” (SPM), which differs somewhat from the Federal Poverty Level.

The Center began with a projected SPM of 12.4% in February 2020, the lowest recorded poverty rate since 2001. Its projected poverty rates after the onset of the COVID-19 pandemic, however:

point to higher poverty rates today. If unemployment rates rise to 10 percent, comparable to the unemployment rate during the peak of the Great Recession, we project that poverty rates would rise to 15 percent. This is approximately the same rate of poverty observed in 2010. (note omitted). If unemployment rates rise to 20 percent, we project a poverty rate of 16.9 percent—the highest rate of poverty since 1967, the first year for which reliable estimates of poverty are available. Finally, if annual unemployment rates rise to 30 percent, we project a poverty rate of 18.9 percent. This would mark the highest rate of poverty over the past 50 years.<sup>25</sup>

In October, the State of Michigan reported that “Michigan’s seasonally adjusted jobless rate declined by two-tenths of a percentage point in September to 8.5 percent. . . The number of employed and unemployed both moved down in September, as the state workforce decreased by 23,000 over the month.” The State’s unemployment report continued on to state that “The U.S. jobless rate fell by half a percentage point between August and September to 7.9 percent. Michigan’s rate in September was six-tenths of a percentage point above the national rate. Over the year, the state rate advanced by 4.6 percentage points, while the U.S. rate rose by 4.4 percentage points.”

---

<sup>24</sup> Parolin and Wimer (April 16, 2020). Forecasting Estimates of Poverty During the COVID-19 Crisis: Poverty Rates in the United States Could Reach Highest Levels in Over 50 Year, available at <https://www.povertycenter.columbia.edu/news-internal/coronavirus-forecasting-poverty-estimates>, (last accessed November 11, 2020.)

<sup>25</sup> Id., at 4 - 5.



Accordingly, the 20% and 30% unemployment scenarios are set aside for this discussion. Even with this lowest scenario, the Columbia research center stated: “under an optimistic scenario, in which employment rates return to pre-crisis levels during the summer of 2020, annual SPM poverty rates are still projected to reach levels comparable to the Great Recession.”<sup>26</sup> Employment rates, as we now know, did not return to the pre-crisis levels in the summer of 2020.

This increase in Poverty is important for purposes of this proceeding because it is not likely to be resolved in the short-term. The long-term danger arises because when people lose their jobs, the long-lasting effects are not just on their income. Unemployment has a negative effect on workers' skills and education, even on their health—people who are unemployed become sicker. Human capital, the skills of the overall workforce, decays over time because of the loss of jobs. Moreover, with the COVID-19 pandemic, it is generally recognized that many of the jobs that have been lost will never come back. One recent research paper from the Becker Friedman Institute for Economics at the University of Chicago estimates that between 32% and 42% of COVID-19 induced layoffs will be permanent.<sup>27</sup>

**The Impact of (and on) Savings:** When loss of income happens to the poor, they are least able to be able to weather the difficulties. Nearly 40% of U.S. households, including nearly all low-wage workers, fall into a category referred to as “liquid asset poor.” “Liquid asset poverty” is a term-of-art, referring to households who lack sufficient liquid assets to replace income in order to subsist at the Poverty Level for three months in the absence of income. According to a Pew Research Center report, “only about one-in-four (23%) [lower income adults] say they have rainy day funds set aside that would cover their expenses for three months in case of an emergency such as job loss, sickness or an economic downturn, compared with 48% of middle-income and 75% of upper-income adults.”<sup>28</sup>

As the COVID-19 economic crisis moves into a more prolonged period, the impact of the lack of savings will become increasingly pronounced, with low-income customers, in particular, unable to draw on resources to pay day-to-day bills. A Pew Research Center study published in late September reported that half of all adults who said they had lost a job due to the coronavirus were still unemployed “roughly six months since the coronavirus outbreak sent shockwaves

---

<sup>26</sup> Id., at 9.

<sup>27</sup> Davis et al. (June 2020). COVID-19 is also a Reallocation Shock, available at: [https://bfi.uchicago.edu/wp-content/uploads/BFI\\_WP\\_202059.pdf](https://bfi.uchicago.edu/wp-content/uploads/BFI_WP_202059.pdf) (last accessed November 11, 2020).

<sup>28</sup> Parker, Horowitz and Brown (April 21, 2020). About Half of Lower-Income Americans Report Household Job or Wage Loss Due to COVID-19, Pew Research Center: Washington D.C. Available at <https://www.pewsocialtrends.org/2020/04/21/about-half-of-lower-income-americans-report-household-job-or-wage-loss-due-to-covid-19/> (last accessed November 17, 2020).

through the U.S. economy.”<sup>29</sup> Moreover, according to Pew, even those who did not lose their job, but who nonetheless still lost income, were still in bad economic shape. Pew reported:

Of those who say they personally lost a job, half say they are still unemployed, a third have returned to their old job and 15% are in a different job than before. Lower-income adults who were laid off due to the coronavirus are less likely to be working now than middle- and upper-income adults who lost their jobs (43% vs. 58%). Adults ages 18 to 29 are less likely than those 30 to 64 to have returned to their previous job.

Even if they didn’t lose a job, many workers have had to reduce their hours or take a pay cut due to the economic fallout from the pandemic. About a third of all adults (32%) say this has happened to them or someone in their household, with 21% saying this happened to them personally. Most workers who’ve experienced this (60%) are earning less now than they were before the coronavirus outbreak, while 34% say they are earning the same now as they were before the outbreak and only 6% say they are earning more.<sup>30</sup>

Pew continues, however, to note that “lower-income adults who lost their jobs because of the coronavirus outbreak are more likely than those with middle or upper incomes to remain unemployed. Some 56% of workers with lower incomes who lost their job because of the coronavirus outbreak say they are currently unemployed, compared with 42% of middle- and upper-income adults.”<sup>31</sup>

One of the long-term economic implications of the job loss and other loss of income is just now becoming more evident. Economic difficulties, particularly for lower-income households, will prevail for an extended period of time not only because these households have been forced to use their emergency savings, but also because they have been forced to incur substantial debt during the COVID-19 pandemic to date. According to Pew, while 44% of lower income Americans have used money from their savings and/or retirement accounts as a result of the economic downturn attributable to COVID-19, only 33% of middle-income households, and only 16% of upper income households, have done so.<sup>32</sup>

---

<sup>29</sup> Kim Parker, Rachel Minkin and Jesse Bennett (September 24, 2020). Economic Fallout from COVID-19 Continues to Hit Lower-Income Americans the Hardest, at 1, Pew Research Center (Washington D.C.). <https://www.pewsocialtrends.org/2020/09/24/economic-fallout-from-covid-19-continues-to-hit-lower-income-americans-the-hardest/> (last accessed November 17, 2020).

<sup>30</sup> Id., at 5, 7, 8.

<sup>31</sup> Id., at 7 – 8.

<sup>32</sup> Id., at 11.

Those affected by coronavirus related job loss or pay cuts are much more likely than those who have not experienced these setbacks to have drawn on additional resources. Fully 46% of adults who say they or someone in their household have either been laid off or taken a pay cut as a result of the coronavirus outbreak say they have used money from a savings or retirement account to pay their bills, compared with 17% of those who have not experienced these setbacks.<sup>33</sup>

As the COVID-19 economic crisis continues, these households are now running out. Clever's ongoing COVID-19 financial impact assessments most recently reported that "61% of Americans now say their emergency savings won't last through the end of the year or that they have already run out of savings."<sup>34</sup>

This is not an uncommon observation. A Bankrate survey found that "of households with income below \$50,000, about 44% say their savings has dropped, compared with 27% of those earning above that amount. . ." Bankrate reported that 27% of Americans say that they now have emergency savings that would last less than three months; 20% say their emergency savings would last from three to five months; and 25% say their emergency savings would last six months.<sup>35</sup> There is, however, a dramatic difference based on income. According to the Bankrate survey:

Lower-income households were hit the hardest by the pandemic. In fact, those with incomes below \$30,000 a year were the only income group where a majority of the respondents were somewhat or very uncomfortable with their emergency savings, at 75 percent. Other results continue to show the divide between those earning higher and lower incomes. About 46 percent of households earning more than \$75,000 a year had enough to cover six months of expenses. In contrast, only 11 percent of those earning \$30,000 or less did.

One impact of this loss of savings is that households are now being forced to incur additional household debt to pay month-to-month bills. According to Ortegren, "2.3x more people reported taking on additional credit card debt to cover expenses during the pandemic in September (18%) than in April (8%). 1 in 4 Americans reported taking on more non-mortgage debt as a result of the pandemic and 54% of those in debt borrowed an additional \$2,000 or more."<sup>36</sup>

---

<sup>33</sup> Id., at 12.

<sup>34</sup> Francesca Ortegren (September 24, 2020). How COVID-19 Has Impacted Americans Financially: September Update, at 2, <https://listwithclever.com/research/covid-impact-september/> (last accessed November 17, 2020).

<sup>35</sup> Survey: Nearly 3 times as many Americans say they have less emergency savings versus more since pandemic, available at <https://www.bankrate.com/banking/savings/emergency-savings-survey-2020/> (last accessed November 17, 2020).

<sup>36</sup> Ortegren, supra.

The conclusion to be drawn from this data is that Michigan's low-income households, including the State's utility consumers, are a long ways away from achieving any post-pandemic economic stability. Even should the public health crisis associated with COVID-19 end in the coming months, the associated economic crisis will continue. It is that economic crisis far more than the public health crisis that Michigan's utilities, and, therefore, Michigan's Public Service Commission must address. It is the ongoing economic crisis that will adversely affect the inability-to-pay of Michigan's low-income consumers.

## **PART 2: THE EMPIRICAL NEED FOR FLEXIBLE, YET COMPREHENSIVE, COVID-19 RESPONSES TO NONPAYMENT.**

This section explains how and why, as Michigan considers its longer-term regulatory responses to the economic crisis imposed on the State by the COVID-19 pandemic, it is important that the State address the root problem of inability-to-pay. Addressing the incremental problems associated with the economic crisis brought about by COVID-19 will ultimately be unsuccessful if the underlying inability-to-pay is not addressed at the same time. When the State addresses inability-to-pay, there is a need for a flexible, and yet comprehensive, approach.

Inability-to-pay is largely driven by home energy burdens. Home energy burdens represent bills as a percentage of income. In calculating a home energy burden, a household's home energy bill is placed in the numerator while the household's annual income is placed in the denominator. For example, if a household has a home energy bill of \$1,000 and an income of \$12,000, the household would have a home energy burden of 8.3% ( $\$1,000 / \$12,000 = 0.083$ ). A home energy burden can be calculated for the total home energy bill, or for a home energy bill disaggregated by fuel. Separate burdens, in other words, can be determined for natural gas and for electricity.

Home energy burdens can be expected to vary widely in Michigan, both across geographic areas and across income levels. Accordingly, COVID-19 responses must be sufficiently flexible to allow utilities to respond to these varying circumstances. As a corollary, the responses must be sufficiently comprehensive to allow utilities to respond to these varying circumstances. The point of this section is to document the extent of the variations in circumstances throughout the State of Michigan.

In the discussion below, data has been developed for each Zip Code Tabulation Area (ZCTA) in the State of Michigan.<sup>37</sup> All ZCTAs were downloaded for the State of Michigan. If the Census

---

<sup>37</sup> ZCTAs are nearly, but not quite, identical to Zip Codes. ZCTAs are used by the U.S. Census Bureau, while Zip Codes are creatures of the U.S. Postal Service. According to the Census Bureau: "ZIP Code Tabulation Areas (ZCTAs) are generalized areal representations of United States Postal Service (USPS) ZIP Code service areas. The USPS ZIP Codes identify the individual post office or metropolitan area delivery station associated with mailing

Bureau reports a zero (0) for the numbers of households, number of persons (i.e., population), number of occupied housing units, or median income for a ZCTA, that ZCTA was deleted from further consideration. Data on various aspects of each ZCTA was obtained from the Census Bureau. A list of each data element, along with the Census Table reporting that element, is presented in Appendix A. The data in each Census Bureau table was matched, by ZCTA, with all other Census Tables.

In short, the shortcoming that this section seeks to identify and prevent is to think of “the low-income population” as a single monolithic group of customers whose payment difficulties can be addressed through utility responses that do not respond to the particular circumstances of individual customers. The appropriate long-term regulatory response to COVID-19 is the comprehensive, flexible, program identified in Part 3 of these comments. This section, however, is limited to identifying the diversity across the State of Michigan in factors contributing to low-income payment difficulties.

### ***Household Incomes Vary Widely throughout the State of Michigan.***

In assessing an appropriate COVID-19 response in Michigan, the Michigan PSC should take into account the underlying incomes of customers who are likely to be adversely affected. Examining incomes throughout the State of Michigan, it becomes evident that regulators should explicitly take income into account in developing a reasonable response to COVID-19 hardships. Incomes vary widely throughout the state. The discussion below examines income from three different perspectives: (1) ratio of income to Federal Poverty Level; (2) dollars of income; and (3) incomes of the First Quintile of population.

### **Ratio of Income to Federal Poverty Level**

Table 6 below shows the substantial variation in the percentage of population that lives at differing ranges of the Federal Poverty Level throughout Michigan. For each ZCTA, the percentage of population living at the varying ranges of Poverty Level was determined. All 987 ZCTAs were then rank-ordered from lowest percentage to highest percentage. The percentage at a selected range of percentiles was then determined for each range. The ZCTA at the 40<sup>th</sup> percentile of the “below 50% of Poverty” range, for example, is the ZCTA with a percentage where 40% of all other zip codes have lower percentages of population with income below 50% of Federal Poverty Level and 60% of all zip codes have higher percentages. Similarly, a ZCTA

---

addresses. USPS ZIP Codes are not areal features but a collection of mail delivery routes.” U.S. Census Bureau, Zip Code Tabulation Areas (ZVTAs), <https://www.census.gov/programs-surveys/geography/guidance/geo-areas/zctas.html> (last accessed November 16, 2020). In these comments, the terms “ZCTA” and “zip code” are used interchangeably.

at the 80<sup>th</sup> percentile is that zip code where 80% of zip codes have lower percentages of population with income below 50% of Poverty Level and 20% of zip codes have higher values.

In addition, the statewide mean (i.e., average) value was calculated. In the Table, one can see the difference between the “mean” (i.e., middle) and the “median” (i.e., average) for each range of Poverty. For example, while Michigan as a whole has an average of 6.7% of all persons living with income at or below 50% of Poverty, the zip code (ZCTA) with the median (i.e., middle) percentage of persons with income at or below 50% of Poverty (i.e., half of all other zip codes have higher percentages while the other half of all zip codes have lower values) has only 4.7% of its population with income living in that range of Poverty.

The Table below demonstrates that the proportion of persons living in Deep Poverty (i.e., at or below 50% of Poverty) varies by more than 200% simply from the zip code at the 40<sup>th</sup> percentile (3.8%) to the zip code at the 80<sup>th</sup> percentile (8.6%) ( $8.6\% / 3.8\% = 2.26$ ). The same can be seen for the other two measures of the breadth of low-income status in Michigan. While the ZCTA at the 80<sup>th</sup> percentile of percentage of population at or below 100% of Poverty has 18.8% of its population in that Poverty range, the ZCTA at the 40<sup>th</sup> percentile has a proportion of population in that Poverty range that is only 55% as high (10.3%).

Understanding the variation from the median (50<sup>th</sup> percentile) to the 80<sup>th</sup> percentile provides important insights into the design of bill assistance. If one were to look only at the percentage of households living at or below 200% of Poverty, one would conclude that the “need” statewide is much more homogenous than it really is. While the ratio of the 80<sup>th</sup> percentile to the 50<sup>th</sup> percentile for that Poverty range is 1.34 ( $0.438 / 0.326 = 1.34$ ), the ratio of the 80<sup>th</sup> percentile to the 50<sup>th</sup> percentile for the population with income at or below 50% of Poverty is much greater ( $0.086 / 0.047 = 1.823$ ). Some Michigan Zip Codes show a much greater need at the Deep Poverty level than they would show at the upper range of low-income status.

Table 6. Percentage of Population by Ratio of Income to Poverty Level in Zip Codes

	Percentage of Population in Poverty Range at Different Zip Code Percentiles <sup>38</sup>			
	A	B	C	D
	Pct < 50% FPL	Pct <100% FPL	Pct <200% FPL	Pct 150-200% FPL
40th percentile zip code	3.8%	10.3%	28.8%	8.6%
50th percentile zip code	4.7%	12.0%	32.6%	9.6%
60th percentile zip code	5.7%	14.2%	36.3%	10.5%
70th percentile zip code	6.8%	16.1%	39.7%	11.6%
80th percentile zip code	8.6%	18.8%	43.8%	13.0%
Statewide Mean	6.7%	15.0%	32.7%	8.9%

The final column segregates out only a portion of the total population living with annual income at or below 200% of Poverty, that portion who live with income at between 150% and 200% of Poverty. This Poverty range presents its own unique problems. The population who have income falling into this Poverty range often do not qualify for public assistance. Nonetheless, households with income in this Poverty range generally do not have incomes to sustainably meet their household financial needs over time. The 80<sup>th</sup> percentile zip codes has 50% more persons in this range (13.0%) than the 40<sup>th</sup> percentile (8.6%).

Appendix B below includes maps of the distribution of the various factors discussed in these comments. The following maps are presented in Appendix B regarding the penetratin of population by ratio of income to Federal Poverty Level:

- Map 1 and Map 1A, showing the distribution of the percentage of population with income at or below 200% of Poverty Level. Map 1 presents the entire state, with Map 1A presenting a detailed carve-out of the Southeast Michigan region. Not surprisingly, Map 1 shows that the metropolitan areas such as Detroit, Lansing, Pontiac, and Flint have high concentrations of these low-income households. So, too, however, are there larger concentrations of households with income below 200% of Poverty in the west-central part of Michigan, as well as in the southeast region of the Upper Peninsula. Map 1A shows the dramatic degree to which the City of Detroit with its high concentrations of low-income customers is ringed by a region with a very low concentration of low-income households. In fact, with the exception of a small region of the UP, there are very few

<sup>38</sup> Note as follows. Columns A, B and C are not additive. Column A is a subset of both Columns B and C. Column B is a subset of Column C. Column D is a subset of column C.

areas in Michigan which have the smallest concentration of population with income below 200% of Poverty outside the southern region of the State.

- Map 2 and Map 2A, show the distribution of population with population at or below 50% of Poverty Level (“Deep Poverty”). Map 2 presents the entire state, while Map 2A presents a more detailed carve-out of the Southeast Michigan region. Map 2 shows that the area within Michigan with a high concentration of Deep Poverty is smaller than the area with a high concentration of population having income at or below 200% of Poverty. The prevalence, however, of zip codes in the UP with high concentrations of this Deep Poverty population is striking. While not comprising the entire Upper Peninsula, the red and yellow regions (i.e., those regions with the two highest ranges of Deep Poverty) make up a preponderance of the area in that part of Michigan. In contrast, Map 2 and Map 2A both show that the region of Michigan with low concentrations of Deep Poverty, while not identical to the region with low concentrations of population under 200% of Poverty, are closely aligned.

### **Dollars of Income**

In this section, the data considered involves annual income in terms of absolute dollars rather than in terms of the ratio of income to Federal Poverty Level. The Census Bureau reports income in increments of \$5,000, except for the lower-most tier, which encompasses income from \$0 to \$9,999. The three tiers examined here include: (1) income at or below \$10,000; (2) income at or below \$15,000; and (3) income at or below \$20,000. These ranges are not additive. Each range considered is a subset of the next higher range. For example, households with income at or below \$10,000 are a subset of households with income at or below \$15,000.

Table 7 presents the data in the same format as the discussion of Poverty Levels above. The Table identifies the value for the ZCTA at selected percentile levels. For example, the 40<sup>th</sup> percentile zip code for households with income below \$10,000 has 4.4% of its household with income at or below \$10,000. This means that 40% of all of Michigan’s zip codes have a lower percentage of their total households with that income level, while 60% of Michigan’s zip codes have a higher percentage of households with income below \$10,000. Similarly, the 80<sup>th</sup> percentile zip code for households with income below \$20,000 is 21.9%. This means that the percentage of households with income below \$20,000 is lower than 21.9%, while the percentage of households with income below \$20,000 in the other 20% of zip codes is higher than 21.9%.

This data tells much the same story as the data on Federal Poverty Level. There is considerable variation in dollar levels of income across Michigan. Even excluding zip codes at the more extreme upper deciles (percentiles 80 to 100) and lower deciles (percentiles 0 to 40), the variation simply in these middle ranges (from 40<sup>th</sup> percentile to 80<sup>th</sup> percentile) ranges from



nearly 200% ( $0.085 / 0.044 = 1.93$  for the households with income below \$10,000) to nearly 170% ( $0.219 / 0.131 = 1.67$ ) for households with income below \$20,000.

**Table 7. Percentage of Households by Household Income by ZCTAs**

Percentage of Households in Income Range at Different Zip Code Percentiles

	A	B	C
	Pct <\$10,000	Pct <\$15,000	Pct <\$20,000
40 <sup>th</sup> percentile zip code	4.4%	8.6%	13.1%
50 <sup>th</sup> percentile zip code	5.3%	9.9%	15.1%
60 <sup>th</sup> percentile zip code	6.1%	11.3%	16.8%
70 <sup>th</sup> percentile zip code	7.2%	12.9%	19.0%
80 <sup>th</sup> percentile zip code	8.5%	15.0%	21.9%
Statewide Mean	6.9%	11.6%	16.5%

The corresponding Maps are presented in Appendix B. The maps presented in this Appendix include:

- Map 3, showing the distribution of households with annual income below \$10,000;
- Map 4, showing the distribution of households with annual income below \$15,000; and
- Map 5, showing the distribution of households with annual income below \$20,000.

These Maps present a consistent picture of low incomes across the State of Michigan. Map 3 (percentage households with income below \$10,000), Map 4 (percentage with income below \$15,000) and Map 5 (percentage below \$20,000) show three regions in Michigan with lower incomes: (1) the metropolitan areas in Southeast Michigan; (2) a swatch across the central region of the Lower Peninsula; and (3) a large portion of the Upper Peninsula. Just as importantly, there are very few areas with low concentrations of low annual incomes north of the geographic band running across the southern part of Michigan (south of Grand Rapids and Flint).

## **First Quintile Income**<sup>39</sup>

Finally, this section examines incomes in the First Income Quintile (Q1 Income) throughout the State of Michigan. The conclusion flowing from this examination of Q1 Incomes is necessarily that incomes vary widely by zip codes in Michigan. Table 8 presents the mean income of the Q1 Incomes at selected percentiles. To explain again, for example, the mean Q1 income of the zip code at the 40<sup>th</sup> percentile in Michigan is \$12,931. This means that 40% of all of Michigan's zip codes have a mean Q1 income less than \$12,931, while the remaining 60% of Michigan zip codes have mean Q1 incomes greater. The mean Q1 income at the 80<sup>th</sup> percentile zip code is \$19,113. That means that 80% of all Michigan zip codes have a mean Q1 income less than \$19,113, while the remaining 20% of Michigan zip codes have mean Q1 incomes greater.

Unlike the Tables above, rather than looking at the range of percentiles bracketing the middle mean Q1 incomes, the Table below presents the mean Q1 income at each decile of zip codes. The Table also presents the minimum and maximum (i.e., lowest and highest) mean Q1 incomes in a Michigan zip code. The purpose here is to demonstrate that the substantial range of incomes, each in the lowest quintile (First Quintile) of a zip code across the state.

As can be seen, the variation between the zip code with the lowest (minimum) Q1 mean income and the highest (maximum) Q1 mean income is nearly 20-fold ( $\$42,993 / \$2,270 = 18.9$ ). The variation between the lowest decile (10<sup>th</sup> percentile) and the highest decile (90<sup>th</sup> percentile) is 260% ( $\$23,108 / \$8,895 = 2.60$ ). A household with the average Q1 income in the 90<sup>th</sup> percentile zip code in Michigan, in other words, has more than two-and-a-half times more income than a household with the average Q1 income in the 10<sup>th</sup> percentile zip code.

Finally, the Table shows that average Q1 incomes jump significantly from one decile to the next beginning at the 60<sup>th</sup> percentile. While the increase from the 60<sup>th</sup> percentile to the 70<sup>th</sup> percentile is \$1,526, the increase from the 70<sup>th</sup> to the 80<sup>th</sup> is \$2,082; and from the 80<sup>th</sup> to the 90<sup>th</sup>, the increase is \$3,995. The proportion of ZCTAs with substantial increases in the mean Q1 incomes, in other words, is not limited to the zip codes with the very highest mean Q1 incomes. The substantial increases occur from decile-to-decile for the highest 40% of zip codes (i.e., 60<sup>th</sup> percentile and higher).

---

<sup>39</sup> In determining “quintiles” of income, the Census Bureau rank orders each household by its annual income by geographic area (in this instance, ZCTAs). That rank ordering is then divided into five equal parts, each part which is known as a “quintile.” The First Quintile (sometimes referred to as the “lowest Quintile”) is that one-fifth of the population with the *lowest* income in the geographic area. It should be noted, however, that simply because a household is in the lowest one-fifth of income in a particular ZCTA, that household is not necessarily a “low-income” household. In a ZCTA with very high incomes, the lower quintile of income can nonetheless still be quite high.

Table 8. Mean Income of First Quintile for Zip Codes at Different Percentiles of Mean Income (Michigan 2018)

	Mean Q1 Income	Difference from Preceding Decile
10 <sup>th</sup> percentile zip code	\$8,895	---
20 <sup>th</sup> percentile zip code	\$10,650	\$1,755
30 <sup>th</sup> percentile zip code	\$11,824	\$1,174
40 <sup>th</sup> percentile zip code	\$12,931	\$1,107
50 <sup>th</sup> percentile zip code	\$14,250	\$1,319
60 <sup>th</sup> percentile zip code	\$15,505	\$1,255
70 <sup>th</sup> percentile zip code	\$17,031	\$1,526
80 <sup>th</sup> percentile zip code	\$19,113	\$2,082
90 <sup>th</sup> percentile zip code	\$23,108	\$3,995
Minimum zip code	\$2,270	---
Maximum zip code	\$42,993	---

Map 6 in Appendix B presents the statewide distribution of mean Q1 incomes, with Map 6A presenting a carve-out of the Southeast Michigan region. This Map seems to present a story of three different areas of Michigan. Across the southern end of the state, there is a geographic band with noticeably higher average incomes within the First Quintile of Income. The prevalence of red- and yellow-shaded regions demonstrates that the average First Quintile Incomes are \$14,000 and higher. In the middle of the state up to the top of the Lower Peninsula is a region where green-shaded regions primarily appear, showing a medium range of average First Quintile Incomes. While there are green zip codes in other parts of the state, the prevalence of green-shaded areas occurring in this region is not found elsewhere. Finally, the northern part of the Lower Peninsula, along with the Upper Peninsula is where the lowest average First Quintile Incomes are found outside of Southeast Michigan.

The detailed carve-out of Southeast Michigan shown in Map 6A confirms what has previously been shown with respect to Poverty Levels. There is a concentration of very low-incomes in and immediately adjacent to Detroit, surrounded by another inner ring where there are higher First Quintile Incomes. The same circles of income are found with other metropolitan areas, such as Flint and Pontiac.

***Given Household Incomes, Affordable Bills are Likely to Vary Widely throughout the State of Michigan.***

The degree of substantial differences in incomes around the State of Michigan demonstrates the extent to which there would also be substantial differences in affordable bills across Michigan. An affordable burden is defined to be equal to six percent of income for total home energy.<sup>40</sup> This six percent burden as a demarcation of what is “affordable” has been frequently adopted, including in the states of New Hampshire,<sup>41</sup> New York,<sup>42</sup> New Jersey<sup>43</sup> and Illinois.<sup>44</sup> In addition, at its public meeting on September 19, 2019, the Pennsylvania PUC voted to cap home energy burdens for households with annual income at or below 50% of Poverty Level at 6% of income.<sup>45</sup> This affordable burden is allocated between electric and natural gas service on a 50%/50% basis.<sup>46</sup> The affordable burden for electric bills standing alone, therefore, is 3% of annual income.

---

<sup>40</sup> The 6% is a calculated figure. It is based on the premise that utility costs should not exceed 20% of shelter costs. Moreover, it is based on the premise that total shelter costs should not exceed 30% of income. 20% of 30% yields a 6% affordable utility burden.

It is universally accepted that total shelter costs are “unaffordable” if they exceed 30% of income. Total shelter costs include not only rent/mortgage, but all utilities (except telephone). See generally, Mary Schwartz and Ellen Wilson (2008). “Who Can Afford to Live in a Home: A Look at Data from the 2006 American Community Survey,” U.S. Census Bureau: Washington D.C. They state in relevant part:

The conventional public policy indicator of housing affordability in the United States is the percent of income spent on housing. Housing expenditures that exceed 30 percent of household income have historically been viewed as an indicator of a housing affordability problem. The conventional 30 percent of household income that a household can devote to housing costs before the household is said to be “burdened” evolved from the United States National Housing Act of 1937.

\* \* \*

Because the 30 percent rule was deemed a rule of thumb for the amount of income that a family could spend and still have enough left over for other nondiscretionary spending, it made its way to owner-occupied housing too. Prior to the mid-1990s the federal housing enterprises (Fannie Mae and Freddie Mac) would not purchase mortgages unless the principal, interest, tax, and insurance payment (PITI) did not exceed 28 percent of the borrower’s income for a conventional loan and 29 percent for an FHA insured loan. Because lenders were unwilling to hold mortgages in their portfolios, this simple lender ratio of PITI to income was one of many “hurdles” a prospective borrower needed to overcome to qualify for a mortgage. There are other qualifying ratios as well; most of which hover around 30 percent of income. The amount of debt outstanding and the size and frequency of payments on consumer installment loans and credit cards influence the lender’s subjective estimation of prospective homebuyers’ ability to meet the ongoing expenses of homeownership. Through the mid-1990s, under Fannie Mae guidelines for a conventional loan, total allowable consumer debt could not exceed eight percent of borrower’s income for conventional mortgage loans and 12 percent for FHA-insured mortgages. So through the mid-1990s, underwriting standards reflected the lender’s perception of loan risk. That is, a household could afford to spend nearly 30 percent of income for servicing housing debt and another 12 percent to service consumer debt. Above these thresholds, a household could not afford the home and the lender could not afford the risk. While there are many underwriting standards, none of them made their ways into the public policy lexicon like the 30 percent of income indicator of housing affordability.

## **Affordable Bills At Average First Quintile Incomes.**

The Table below shows the affordable annual bills that would correspond to the mean Q1 income for zip codes at selected percentiles throughout Michigan. To determine these affordable bills, the mean Q1 income for each ZCTA was multiplied by 3% (for natural gas, electric non-heating) and by 6% (for total natural gas plus electricity, all-electric).

---

The mid to late 1990s ushered in many less stringent guidelines. Many households whose housing costs exceed 30 percent of their incomes are choosing then to devote larger shares of their incomes to larger, more amenity-laden homes. These households often still have enough income left over to meet their non-housing expenses. For them, the 30 percent ratio is not an indicator of a true housing affordability problem but rather a lifestyle choice. But for those households at the bottom rungs of the income ladder, the use of housing costs in excess of 30 percent of their limited incomes as an indicator of a housing affordability problem is as relevant today as it was four decades ago.

<sup>41</sup> New Hampshire Public Utilities Commission, Docket No. DE 06-079 (2006). (“The current tiered Low Income Electric Assistance Program (EAP) was designed with the goal of making electricity “affordable” at 4 % of household gross income for power and light usage and 6% of household gross income for electric heat.”)

<sup>42</sup> The New York Public Service Commission favored a 6% energy burden level because it appears to be a widely accepted limit for utility payments, including in New Jersey and Ohio; and also reflected by EIA data. New York Public Service Commission’s *Order Adopting Low Income Program Modifications and Directing Utility Filings* at 7-48, Case 14-M-0565 (effective May 20, 2016).

<sup>43</sup> New Jersey requires USF customers who use natural gas for heating and electricity will pay 3% for their natural gas service and 3% for their electricity service. If, however, the customer uses electricity for heating, the entire 6% is devoted to the electricity service. The discount provided to customers is based on the difference between their annual utility bill (after LIHEAP is applied) and the required percentage of household income.

<https://www.state.nj.us/dca/divisions/dhcr/faq/usf.html#q1>

<sup>44</sup> Illinois administers a percentage of income plan (PIP) that charges customers a maximum of 6% of their income for gas and electric service. The maximum PIP credit, however, is \$150 per month or \$1,800 annually. Illinois Senate Bill 1918 at 108-109. <http://www.ilga.gov/legislation/96/SB/PDF/09600SB1918lv.pdf>

<sup>45</sup> Pennsylvania PUC (September 19, 2019). Home Energy Affordability for Low-Income Customers in Pennsylvania, Final Policy Statement and Order, Docket M—2019-3012599.

<sup>46</sup> Allocating the burden on a 50%/50% basis between electricity and natural gas service is unquestionably a conservative approach given that electric bills tend to be higher than natural gas bills. Nonetheless, two principles are in play in this recommendation. First, “affordability” is a range and not a point. It cannot be said, for example, that 3% is affordable but 3.5% is not. Second, an analysis should not imply greater precision than can actually be achieved in reality. From a practical perspective, a gas/electric split for a 6% burden can either be 3%/3% (50%/50%) or can be 4%/2% (67%/33%). While the 3%/3% split may somewhat understate electric affordability, a 4%/2% split would somewhat overstate electric costs. Accordingly, an intuitively explainable allocation of 50%/50% (3%/3%) is used in these comments.

Table 9. Affordable Bills at Mean First Quintile Income (3% and 6% burdens)  
By ZCTA Decile (Michigan 2018)<sup>47</sup>

	Affordable Bill at 3%	Affordable Bill at 6%
10 <sup>th</sup> percentile zip code	\$267	\$534
20 <sup>th</sup> percentile zip code	\$320	\$639
30 <sup>th</sup> percentile zip code	\$355	\$709
40 <sup>th</sup> percentile zip code	\$388	\$776
50 <sup>th</sup> percentile zip code	\$428	\$855
60 <sup>th</sup> percentile zip code	\$465	\$930
70 <sup>th</sup> percentile zip code	\$511	\$1,022
80 <sup>th</sup> percentile zip code	\$573	\$1,147
90 <sup>th</sup> percentile zip code	\$693	\$1,386

As the Table immediately above demonstrates, an affordable bill for the typical customer in the one-fifth of households (i.e., First Quintile) with the lowest incomes in Michigan will be sharply different depending upon where someone lives in the State. For example, in one narrow range, for heating customers, the difference between an affordable bill in the zip code at the 70<sup>th</sup> percentile (\$1,022) is nearly \$250 more than an affordable bill in the zip code at the 40<sup>th</sup> percentile (\$776). Even for non-heating electric (stand-alone gas) customers, there are as many customers in the zip code with an affordable bill as high as \$693 (90<sup>th</sup> percentile) as there are in the zip code with an affordable bill as low as \$267 (10<sup>th</sup> percentile), a difference of \$426. The zip code with the *median* (50<sup>th</sup> percentile) affordable non-heating bill is \$265 lower than the 90<sup>th</sup> percentile, but \$161 higher than the 10<sup>th</sup> percentile. For heating bills, the zip code at the 50<sup>th</sup> percentile (\$855) is more than \$500 less than the zip code at the 90<sup>th</sup> percentile (\$1,386), but is more than \$320 more than the zip code at the 10<sup>th</sup> percentile. In this discussion, the precise levels of bills are not as important as the wide variations across the State.

The significance of these differences is discussed in more detail below. In short, however, one challenge for the MPSC is to develop a principled response that addresses customers at both end of the spectrum. Developing such a response is not merely a question of fairness, it is a question of whether the response adopted by the Commission will effectively and efficiently accomplish the objective of assisting low-income customers to make sustainable payments, and of assisting utilities to effectively and efficiently collect the bills which they render. Without considering bill

<sup>47</sup> A 3% burden is that burden which is generally deemed to be affordable for natural gas heating or electric non-heating. A 6% burden is that burden which is generally deemed to be affordable for combined natural gas and electricity, as well as for all-electric customers.

burdens for customers, it is difficult, if not impossible, to effectively and efficiently seek sustainable low-income bill payments.

Map 7 presents the distribution of home energy bills that would be necessary in order for bills to be affordable at 3% of average First Quintile Income (i.e., for electricity non-heating, natural gas standing alone). In contrast, Map 8 shows the level of home energy bills that would be necessary in order for bills to be affordable at 6% of average First Quintile Income (i.e., combined gas/electric; all-electric). Map 8A presents the carve-out to allow a more detailed observation of the Southeast Michigan region.

As would be expected, the bills required in order to achieve affordability objectives closely follow the distribution of average First Quintile Incomes throughout Michigan. There appear to be three ascertainable bands: one across the southern part of the state; a second across the middle-part of the state; and the third across the Upper Peninsula.

### **Affordable Bills at 100% of Poverty Level.**

A similar result can be seen if one examines the level of bills that would be necessary to achieve in order to be affordable at 100% of the Federal Poverty Level. In this analysis, Poverty Level is established given the average household size in each ZCTA. Since Poverty Level differs by household size, a zip code with an average household size of 2.3 persons, for example, would have a lower income at 100% of Poverty Level than a zip code with an average household size of 3.1 persons.

Table 10 shows that varying income in this narrow way (i.e., based on average household size within a zip code) nonetheless would yield a need for dramatically different bills for bills to be affordable at either 3% of income (natural gas or electricity standing alone) or 6% of income (gas and electricity combined or all-electric). At an affordable 3% burden, the required bill level would vary by nearly \$100 between the zip code at the 10<sup>th</sup> percentile and the zip code at the 90<sup>th</sup> percentile. The variation can also be seen at the two extremes. The maximum affordable bill at a 3% burden (at 100% of Poverty) would be \$899, while the minimum affordable bill at a 3% burden (at 100% of Poverty) would be less than half that amount (\$390).

Home energy bills at a 6% affordable burden demonstrate the same range.<sup>48</sup> The affordable bill in the zip code at the 90<sup>th</sup> percentile is nearly \$180 higher than the affordable bill in the zip code at the 10<sup>th</sup> percentile. This occurs despite the fact that the underlying Federal Poverty Level is held constant for each zip code (at 100% of Poverty Level).

---

<sup>48</sup> This would be true by definition. The same incomes are used, with only the affordable burden being varied. Accordingly, the bill that would be required to remain affordable would increase in the same proportion as the affordable bill burden is increased.

	Affordable Bill at 3%	Affordable Bill at 6%
10 <sup>th</sup> percentile zip code	\$507	\$1,014
20 <sup>th</sup> percentile zip code	\$525	\$1,050
30 <sup>th</sup> percentile zip code	\$537	\$1,073
40 <sup>th</sup> percentile zip code	\$547	\$1,094
50 <sup>th</sup> percentile zip code	\$554	\$1,108
60 <sup>th</sup> percentile zip code	\$561	\$1,122
70 <sup>th</sup> percentile zip code	\$569	\$1,138
80 <sup>th</sup> percentile zip code	\$581	\$1,161
90 <sup>th</sup> percentile zip code	\$596	\$1,192
Zip code with minimum	\$390	\$780
Zip code with maximum	\$899	\$1,799

Map 9A shows the distribution of the level of home energy bill that would be required in each zip code to be affordable at a 3% burden (at 100% of Poverty Level). Map 9B shows the same distribution for bills required to be affordable in each zip code at a 6% burden (at 100% of Poverty). As can be seen, zip codes in the southern part of Michigan need bills to be substantively lower to remain affordable than zip codes in the northern part of Michigan, including the Upper Peninsula require bills to be. The pink- and yellow-shaded zip codes cluster in the southern part of the State while the purple zip codes cluster in the middle and northern parts of the State.

***Home Energy Bills are Likely to Widely Vary throughout the State of Michigan.***

In addition to incomes which widely vary across the State of Michigan, home energy bills are likely to substantially vary across the State as well. Home energy bills are not available disaggregated by zip code across the State of Michigan. Nonetheless, it is possible to review available information to gain some insights into the likelihood that bills will significantly differ depending on where a customer lives. In furtherance of this inquiry, this section will examine

<sup>49</sup> A 3% burden is that burden which is generally deemed to be affordable for natural gas heating or electric non-heating. A 6% burden is that burden which is generally deemed to be affordable for combined natural gas and electricity, as well as for all-electric customers.



the following factors that are likely to affect the level of Michigan residential home energy bills: (1) the penetration of natural gas and electricity as primary home heating fuels; (2) the size of housing units (both large and small) as measured by the number of rooms in the housing units; and (3) the year in which housing units were constructed.

**Penetration of Natural Gas and Electricity as Primary Heating Fuel**

Home energy bills are assumed to vary widely based upon the fuel which a household uses as its primary heating fuel (all other things equal). Households using electricity as their primary heating fuel are assumed to face higher home energy bills than households using natural gas as their primary heating fuel. This section examines the penetration of natural gas and electricity throughout Michigan, disaggregated by tenure (homeowner, tenant).

**Table 11. Percent of Housing Units by Natural Gas and Electricity as Heating Fuel  
(by tenure) (Michigan 2018)<sup>50</sup>**

	Percent Total Gas	Percent Total Electric	Homeowner Gas	Percent Homeowner Electric	Percent Renter Gas	Percent Renter Electric
40 <sup>th</sup> percentile zip code	48.1%	6.1%	46.6%	4.0%	53.8%	12.4%
50 <sup>th</sup> percentile zip code	60.2%	7.0%	58.6%	4.7%	61.8%	15.0%
60 <sup>th</sup> percentile zip code	70.0%	8.0%	71.4%	5.4%	68.1%	17.8%
70 <sup>th</sup> percentile zip code	79.8%	9.2%	84.9%	6.2%	72.8%	20.6%
80 <sup>th</sup> percentile zip code	86.5%	11.0%	91.2%	7.2%	78.4%	24.5%
Statewide Mean	76.5%	9.6%	78.0%	5.4%	72.7%	19.9%

Statewide, natural gas is by far the most prevalent heating fuel in Michigan. On a statewide basis, more than three-out-of-four households heat with natural gas. Somewhat more homeowner-occupied units heat with natural gas than do renter-occupied units. Nonetheless, the penetration of natural gas heating varies considerably throughout Michigan. The zip code with the 40<sup>th</sup> percentile penetration of natural gas (i.e., 40% have a lower penetration, while 60% have

<sup>50</sup> Columns in this table are not additive. For example, the zip code with the 80<sup>th</sup> percentile penetration of natural gas has a natural gas penetration of 86.5%. This table shows further that the zip code with the 80<sup>th</sup> percentile penetration of electricity has an electricity penetration of 11.0%. Those may very well be two *different* zip codes. The Table does *not* show, in other words, that in the 80<sup>th</sup> percentile zip code with a penetration of natural gas at 86.5%, there is an electric penetration of 11.0%.

a higher penetration) has a natural gas penetration of less than 50%. Natural gas penetration is ubiquitous, but not universal. In the zip code at the 80<sup>th</sup> percentile of natural gas penetration, 86.5% of total housing units use natural gas as their heating fuel.

Overall, renter-occupied units appear to use electricity as their primary heating fuel more frequently than homeowners do.<sup>51</sup> Statewide, while only 5.4% of homeowner-occupied units use electricity as their primary heating fuels, nearly four times that many (19.9%) of renter-occupied units do so. At each decile level in the middle ranges of heating fuel penetration examined, the proportion of renter-occupied units using electricity as their primary heating source is substantially higher than the percentage of homeowners using electricity.<sup>52</sup>

An even more important observation from Table 11 for our purposes here, however, is to note the intra-state variation in the penetration of natural gas and electricity as a primary heating source. Even though electricity has a consistently lower penetration than natural gas, the penetrations of both (natural gas and electricity) at the 80<sup>th</sup> percentile zip code is nearly twice the penetration at the 40<sup>th</sup> percentile zip code.

If one accepts, as we do, that (all other things equal) home energy bills will vary widely based on whether a housing unit is heated primarily with natural gas or electricity, it can be seen that total home energy bills will vary widely in different regions of Michigan due, if for no other reason, to the use of different fuels as the primary heating source.

Maps setting forth the distribution of the percentage of housing units using natural gas and electricity as their primary home heating fuel (Map 10A through Map 10F) are set forth in Appendix B. Maps 10A and 10B show the distribution of the percentage of total occupied units heated by natural gas and electricity respectively. Maps 10C and 10D show the percentage of homeowner-occupied units heated by natural gas and electricity respectively. Finally, Maps 10E and 10F show the percentage of renter-occupied units heated by natural gas and electricity respectively.

As can be seen, the penetration of natural gas as the primary heating fuel is highest in Southeast Michigan (Maps 10A, 10C, 10E). In other regions of the state, particularly as one move north, natural gas is relied on less and less as the primary heating fuel. In contrast, the areas where electricity is relied on most frequently are found not only in the southern region, but also along the Lake Michigan coastal communities and in the Upper Peninsula (UP). The areas with the least reliance on electricity can be found primarily in the UP. The reliance of renter-occupied

---

<sup>51</sup> This may be not because tenants are often in master-metered buildings with electric heating.

<sup>52</sup> Again, note that the data points in each cell are independent of the data points in other cells. For example, the zip code at the 80<sup>th</sup> percentile of electricity as the primary heating source may well be a different zip code than that which is at the 80<sup>th</sup> percentile of natural gas as the primary heating source.

units on electricity as the primary heating fuel can be seen statewide, with lower penetrations found in the UP.

### **Size of Housing Units (Large: 7 or more rooms; Small: 3 or fewer rooms)**

Home energy bills in Michigan will, as elsewhere, vary based on the size of the housing unit. Direct data on the size of Michigan housing units (in square feet), by zip code, is not available. Accordingly, the size of housing units for purposes of this inquiry is measured by the number of rooms in the home. A housing unit with four rooms is assumed to be a “bigger” unit than a housing unit with three rooms.

For purposes here, however, a continuum of housing units sizes is not considered. Instead, this discussion is limited to the percentage of housing units in each Michigan zip code which are either “smaller” units (i.e., having three or fewer rooms) or “larger” units (i.e., having seven or more rooms). The Census Bureau reports the number of housing units in each zip code by the number of rooms in the unit, disaggregated by whether the unit is owner-occupied or renter-occupied. That data is set forth in the Table immediately below.

Not surprisingly, there is a higher percentage of owner-occupied units that are “larger” units (i.e., with 7 rooms or more) than there are renter-occupied units. The percentage of owner-occupied units that have seven or more rooms is consistently two to three times higher than the percentage of renter-occupied units that do. In the zip code at the 50<sup>th</sup> percentile, for example, while 45.2% of owner-occupied units have seven or more rooms, only 14.9% of the renter-occupied units do at the 50<sup>th</sup> percentile.<sup>53</sup> On average statewide, while 48.3% of all owner-occupied units have seven or more rooms, only 13.0% of renter-occupied units do.

---

<sup>53</sup> Again, note that the data points in each cell are independent of the data points in other cells. For example, the zip code at the 60<sup>th</sup> percentile of number of “larger” owner-occupied units (47.7%) may well be a different zip than the zip code at the 60<sup>th</sup> percentile of number of “larger” renter-occupied units (17.5%).

Table 12. Zip Codes by Percent of Housing Units by Fewer Rooms (3 or fewer) or More Rooms (7 or more) by Tenure (Michigan 2018)<sup>54</sup>

	Smaller Units (3 or fewer rooms)			Larger Units (7 or more rooms)		
	All Occupied Units	Owner Occupied	Renter Occupied	All Occupied Units	Owner Occupied	Renter Occupied
40th percentile zip code	20.4%	1.7%	16.4%	20.7%	42.5%	12.7%
50th percentile zip code	23.5%	2.1%	20.5%	24.1%	45.2%	14.9%
60th percentile zip code	27.3%	2.6%	23.9%	28.4%	47.7%	17.5%
70th percentile zip code	32.0%	3.3%	26.6%	33.5%	50.5%	21.2%
80th percentile zip code	38.9%	4.4%	31.2%	40.5%	54.6%	26.3%
Statewide Mean	38.1%	2.1%	26.3%	40.3%	48.3%	13.0%

Again, for our purposes here, however, it is the intra-state variation within each category that is more important. Within the “larger” housing units (7 or more rooms), there is some, but not substantial, variation within the owner-occupied units in the mid ranges of percentiles. While the zip code at the 40<sup>th</sup> percentile has 42.5% of its owner-occupied units with 7 or more rooms, the zip code at the 80<sup>th</sup> percentile has only 54.6% of its owner-occupied units being larger units.

In contrast, there is considerable variation within the renter-occupied category of housing units. Within the renter-occupied units, the zip code at the 80<sup>th</sup> percentile has more than two times the percentage of larger renter-occupied units than the zip code at the 40<sup>th</sup> percentile (12.7% vs. 26.3%). All other things equal, therefore, it should be expected that home energy bills amongst renter-occupied housing units will vary more frequently, and by a greater degree, across the State of Michigan than will home energy bills amongst owner-occupied housing units.

With smaller (3 rooms or fewer) housing units, the expected relationships are again found. The percentage of renter-occupied units that are “smaller” (3 or fewer rooms) is much higher than the percentage of owner-occupied units that are smaller units. On average, and at virtually every percentile in the mid-range percentiles (40<sup>th</sup> percentile to 80<sup>th</sup> percentile), the proportion of renter-occupied units that have three or fewer rooms is roughly ten times higher than the proportion of owner-occupied units.

<sup>54</sup> The values in the columns in this Table may very well represent different zip codes. See, note 50, supra.

The intra-state variation is found amongst smaller housing units as well. The zip code at the 80<sup>th</sup> percentile of renter-occupied units that are smaller units has more than 60% more smaller units than does the zip code at the 40<sup>th</sup> percentile ( $26.3\% / 16.4\% = 1.604$ ). The same relationship can be seen for smaller owner-occupied units. The zip code at the 80<sup>th</sup> percentile of owner-occupied smaller housing units has a penetration more than two times higher than the zip code at the 40<sup>th</sup> percentile (4.4% vs. 1.7%).

Given the proposition that smaller housing units will, all else equal, have lower home energy bills, recognizing a presence of substantial variation in home energy bills across the State of Michigan would appear to be well-founded.

Map 11 and Map 12 in Appendix B show the distribution of the percentage of “smaller” housing units (3 or fewer rooms) (Map 11) and the percentage of “larger” housing units (7 or more rooms) (Map 12) throughout the State of Michigan. The southern part of Michigan appears to have more housing diversity than other parts of the State. The zip codes with high penetrations of smaller housing units, as well as the zip codes with higher penetrations of larger housing units, both demonstrated by yellow- and red-shaded areas, are primarily located in this region. In contrast, the green- and purple-shaded zip codes (those with lower penetrations of smaller and larger housing units) appear more frequently in the northern part of the Lower Peninsula and in the Upper Peninsula. Across the middle region of the Lower Peninsula is a range of zip codes with mid-range penetrations of both smaller and larger housing units (green- and yellow-shaded areas).

### **Year Housing Structure Built (1970 or Before)**

When assessing the level of home energy bills, older homes are generally considered to be associated with higher bills than more recently constructed homes. Older homes are not only less “tight” (from an air-sealing perspective), but they tend to have older primary energy-consuming systems (e.g., home heating, hot water). In Michigan, as Table 13 shows, the percentage of renter-occupied housing constructed before 1970 is not substantially different than the percentage of owner-occupied housing.

There is, however, for both owner-occupied and renter-occupied housing units, considerable variation in the age of housing units when viewed on a zip code basis throughout the State of Michigan. For owner-occupied units, in the zip code at the 40<sup>th</sup> percentile, roughly four-of-ten units (39.8%) were built before 1970, as was also the case for renter-occupied units (41.3%). For both owner-occupied units and renter-occupied units, there is a substantial increase in this number of older housing units (i.e., constructed before 1970) even within the mid-ranges of percentiles. For both categories (owner, renter), the zip code at the 80<sup>th</sup> percentile has 60% more older housing units (owner:  $0.634 / 0.398 = 1.59$ ; renter:  $0.661 / 0.413 = 1.60$ ).

Overall, zip codes with higher percentages of their housing units being 50 years old or older can be expected to have higher home energy bills. Affordability programs that do not take this variation in home energy bills into account will likely have the effect of being ineffective for the higher-bill population.

	Owner-Occupied	Renter-Occupied
40 <sup>th</sup> percentile zip code	39.8%	41.3%
50 <sup>th</sup> percentile zip code	43.6%	46.3%
60 <sup>th</sup> percentile zip code	47.7%	51.6%
70 <sup>th</sup> percentile zip code	54.1%	58.2%
80 <sup>th</sup> percentile zip code	63.4%	66.1%
Statewide Mean	48.8%	47.8%

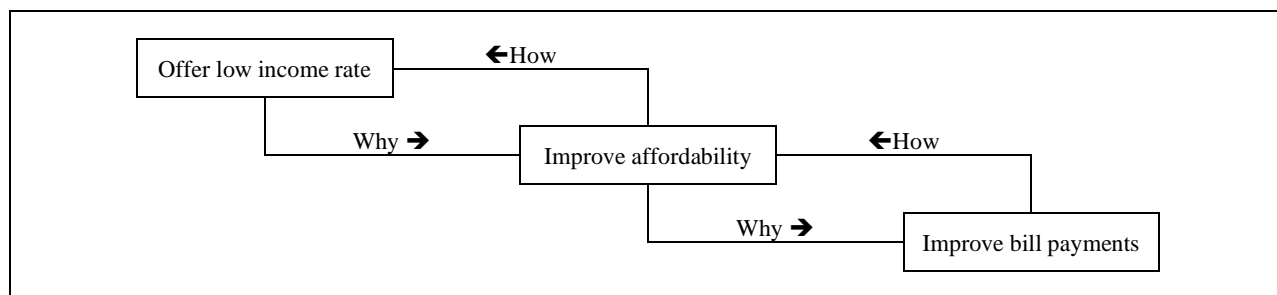
In Appendix B, Map 13 presents the distribution of the presence of “older” (i.e., constructed before 1970) owner-occupied housing units statewide, while Map 14 presents the distribution of the presence of “older” (i.e., constructed before 1970) renter-occupied housing units. For both owner-occupied and renter-occupied housing units, the greater percentage of older units (red- and yellow-shaded zip codes) is located in the southern-most region of the state and in the northern-most region of the Upper Peninsula. The region extending through the middle part of Michigan’s is largely green- and purple-shaded, indicating lower percentages of older housing units, whether those units are owner-occupied (Map 13) or tenant-occupied (Map 14).

***Discussion of Variability of Home Energy Bills throughout the State of Michigan.***

The purpose of a COVID-19 response is to improve the sustainability of bill payment for of utility service by income-eligible customers who would face unaffordable bills in the absence of a utility response. In noting that “affordability” is the objective, it is important to remember that pursuing affordability, and thus offering a low-income discount, is a means to an end, not an end unto itself. The outcome which stakeholders seek to achieve through a more affordable utility rate is the ability of income-challenged customers to take utility service under sustainable conditions. The rationale for a low-income rate is set forth in the decision-model set forth in the figure below. As you move “down” the model, you answer the question “why.” As you move

<sup>55</sup> The values in the columns in this Table may very well represent different zip codes. See, note 50, supra.

“up” the model, you answer the question “how.” Thus, why do offer a low-income rate”? To improve affordability. Why do you seek to improve affordability? To improve bill payments.



It does not matter what response to nonpayment (or to unaffordability) is being considered. The How-Why matrix is applicable whether one is considering a bill affordability program; the structure of deferred payment plans; the imposition of “incentives” or “penalties” (such as late payment charges); or the delivery of usage reduction services.

What is evident in the detailed empirical discussion above is that broad sweeping responses to the inability-to-pay of Michigan’s low-income customers during the continuing COVID-19 economic crisis will not likely have the impact which is sought by such programs. There is simply too much diversity in what bill levels are required for broadly sweeping policies to have a consistently positive impact. For example, a bill credit of \$60 a month may be sufficient to reduce bill burdens in zip codes with upper-mid ranges of affordable bills, but not in those zip codes with bills in the lower ranges required to achieve an affordable burden. An extended payment plan may be sufficient to help retire arrears in those zip codes with higher bills that are “affordable” at the incomes prevalent in that zip code, but not in those zip codes where bills are affordable only at lower levels. A uniform across-the-board discount directed toward low-income customers is likely to over-pay low-income customers in some regions of the state, given the incomes that prevail in those regions, but, at the same time, are likely to under-pay low-income customers in other regions of the state where dramatically lower incomes prevail.

The diversity in incomes and bills across the State of Michigan is examined in detail above because a failure to consider that diversity will likely result in ineffective COVID-19 responses. In contrast, the COVID-19 response proposal below is designed to establish a framework that will accomplish the objective of providing sustainably payable home energy bills (from the perspective of Michigan’s customers), and sustainably collectable home energy bills (from the perspective of Michigan’s utilities).

### **PART 3. AN APPROPRIATE COVID-19 RESPONSE**

An appropriate COVID-19 response by Michigan's utilities, and Michigan's utility regulators, should be comprised of four steps:

- A percentage of income-based bill affordability program directed towards bills for current service;
- An arrearage management program directed towards arrearages that were incurred in months prior to a customer's enrollment in a bill affordability program;
- A usage reduction program directed toward high consumption, high bill credit, customers; and
- A crisis assistance program directed not merely toward the level of incomes, but also directed toward the fragility of incomes.

#### ***Addressing the Affordability of Bills for Current Service.***

The first critical component of a COVID-19 response is a rate affordability program. Through the rate affordability program component, the price of home energy<sup>56</sup> is set at a level that will generate the greatest ability of low-income customers to make actual payments.

Building a rate affordability program consists of the following basic steps:

1. **Eligibility:** Defining the eligibility for the a bill affordability initiative should allow the program to be *open to enrollment* by any low-income consumer.<sup>57</sup> For purposes of this program, a "low-income consumer" is any consumer with gross household income at or below 150% of Federal Poverty Level.<sup>58</sup>
2. **Benefits:** Distributing rate assistance benefits should be on a fixed credit basis. The fixed credit benefits are delivered to the program participant as part of a levelized

---

<sup>56</sup> This includes either electricity or natural gas or both.

<sup>57</sup> Defining eligibility and targeting outreach are two distinctly different tasks. The utility may define eligibility so that all low-income customers may participate, but nonetheless seek to target *outreach* to specific payment-troubled customers. Targeting places special emphasis on enrolling a particular class of customers from among those classes that are eligible.

<sup>58</sup> Expanding eligibility above 150% of Federal Poverty Level often, if not generally, yields a false sense of expanded program participation. As incomes extend above 150% of Federal Poverty Level, the resulting bills at an affordable percentage of income are higher than actual home energy bills. Customers at these income levels, therefore, while income-eligible, would receive no benefit from the percentage of income-based program.



monthly billing plan. The levelized bill under the rate assistance program will represent the annual bill, minus the annual fixed credit, divided into twelve<sup>59</sup> equal monthly installments.

3. **Collections:** Enforcing customer payment obligations after a customer receives a bill affordability benefit should occur through the same credit and collection activities directed toward any residential customer. If a customer receiving a bill affordability benefit does not make appropriate payments, that customer enters the collection cycle with the same rights and responsibilities as any other customer. In this fashion, no new or special administrative process is created for the bill assistance participants.
4. **Recertification:** Recertifying income for customers whose income cannot reasonably be determined to be non-variable over the long-term should occur on an annual basis. Most participants will have their income recertified automatically through a contract with the appropriate local, state or federal agency. For those customers whose income cannot be recertified in this fashion, the customer will be notified at an appropriate time before his or her anniversary date of the need for recertification.

Having provided this summary, the remainder of this section will address the structural issues of rate affordability assistance in more detail.

It should be recognized that under a bill affordability assistance program that is based on affordable home energy burdens, if, because of relatively higher income or relatively lower home energy bills, the pre-determined percent of a household's income will exceed their annual electric bill, the household will receive no benefit. In those instances, the home energy bill is deemed "affordable" and the local utility will collect the entire fully-embedded rate. Only in those instances where the household, due to low-incomes or high bills, faces a utility bill that exceeds the designated percentage of its income, is the bill deemed to be "unaffordable" and the percentage of income-based rate is offered to reduce the burden to an affordable level.<sup>60</sup>

Rate affordability assistance in Michigan should be distributed on a percentage of income basis. Using a percentage of income approach to targeting provides a more efficient use of scarce rate affordability resources. This can be demonstrated by comparing an across-the-board discount to a percentage of income approach. While a percentage of income approach delivers those

---

<sup>59</sup> If a utility offers only an eleven month levelized billing plan, there is no problem. There is no "magic" to a 12-month levelized budget-billing plan.

<sup>60</sup> To illustrate, assume a household has an annual income of \$25,000, an annual energy bill of \$1,200, and is asked to pay six percent (6%) of her income toward her energy bill in an income-based program. This customer's income-based energy bill payment would be \$1,500 ( $\$25,000 \times .06 = \$1,500$ ). Hence, this customer would decide *not* to participate in the income-based rate, since her fully-embedded bill is *less* than the bill rendered under the bill affordability program.

benefits, but only those benefits, needed to bring low-income bills into an affordable range, an across-the-board discount does not. Using an across-the-board discount (or a fixed-dollar discount), the low-income program would pay some customers *more* than is necessary to bring bills into an affordable range while paying other customers *less* than is necessary to bring bills into an affordable range. The likelihood of this happening is demonstrated by the extensive empirical discussion in Part 2 above. Accordingly, it is most appropriate to base the rate affordability component of the bill affordability program on a percentage of income targeting mechanism. Affordable percentage of income burdens are recommended as follows: 6% for total home energy bills (natural gas plus electric non-heating; all-electric); and 3% for either natural gas or electricity on a stand-alone basis.

Although a variety of percentage of income-based approaches exist, delivery of rate affordability assistance using a fixed credit approach is most appropriate. The fixed credit approach begins as an income-based approach. In order to be eligible for the rate, a household must meet *both* eligibility criteria: (1) that the household income is at or below the income-eligibility level for Michigan; and (2) that the household energy burden exceeds the burden deemed to be affordable.<sup>61</sup>

The fixed credit approach next calculates what bill credit would need to be provided to the household in order to reduce the household's energy bill to a designated percent of income. To calculate the fixed credit involves three steps: (1) calculating a burden-based payment; (2) calculating an annual bill; and (3) calculating the fixed credit necessary to reduce the annual bill to the burden-based payment. Each step is explained below.

1. **Burden-based payment:** The first step in the fixed credit model is to calculate a burden-based payment. Assume --simply for the sake of illustration here-- that the household has an annual income of \$8,000 and is required to pay six percent (6%) for its home energy bill. The required household payment is thus \$480. This is determined as follows:  $\$8,000 \times 6\% = \$480$ .

Distinctions in the percentage of income payment are made based upon whether the customer is a heating or non-heating customer. The payment is split evenly between the heating and non-heating component of the utility bill. Under a 6% scenario, a natural gas heating customer would be asked to pay three percent (3%) of the household's income toward her home heating bill, and another three percent (3%) toward her electric bill. An all-electric customer would pay six percent (6%) toward her electric bill. Other percentage burdens would be similarly split half-and-half (8% converts to 4% toward each fuel).

---

<sup>61</sup> A customer may still participate in the arrearage management program component even if he or she does not participate in the rate affordability component.

The energy burden represented by a combined heating and non-heating energy bill should not generally exceed six percent (6%) of income. It is generally accepted that a household's "shelter burden" (rent/mortgage plus taxes plus utilities) should not exceed 30% of income. In addition, a household's home utility bill should not exceed 20% of the household's shelter costs. Combining those two yields an affordable home energy burden of six percent (6%).<sup>62</sup> Clearly, however, the reasonableness of an energy burden is a range and not a point. Ultimately, whether an affordable burden should be set as 6% or as 8% (or some other figure) is a policy decision. The percentage of income burden that triggers significant payment-troubles (*e.g.*, service disconnections) appears to be in the range of 10% to 12% of annual income.<sup>63</sup>

2. **Projected annual bill:** The second step is to calculate a projected annual household energy bill. This calculation is to be made using whatever method the local utility *currently* uses to estimate annual bills for other purposes. A utility, for example, will likely have an established procedure for estimating an annual bill for purposes of placing residential customers (low-income or not) on a levelized Budget Billing Plan (where bills are paid in equal installments over 12 months). That same process can be used to estimate an annual bill for purposes of calculating the needed fixed credit.
3. **Fixed credit determination:** The final step is to calculate the necessary fixed credit to bring the annual bill down to the burden-based payment. Given an annual bill projection of \$1,200 and a burden-based payment of \$480, the annual fixed credit would need to be \$720 ( $\$1,200 - \$480 = \$720$ ). The household's *monthly* fixed credit would be \$60 ( $\$720 / 12 = \$60$ ).

In addition to various administrative benefits from use of a fixed credit, the fixed credit offers the advantage of providing a strong conservation incentive to the low-income customer. Under the fixed credit model, the local utility provides a \$60 fixed credit to the low-income household irrespective of the household's actual bill. If the household increases its consumption, and thus has a higher bill, the household pays the amount of the increase. If, in contrast, the household conserves energy and thus lowers its bill, the household pockets the savings.

The administrative advantages of the fixed credit program are two-fold. First, use of fixed credits as a benefit distribution mechanism allows the program to work within a fixed operating budget. Once a low-income customer is enrolled in the bill affordability program, the maximum

---

<sup>62</sup> This report sets aside for the moment the inclusion of water and sewer utility bills in this six percent.

<sup>63</sup> "Affordability" concerns are triggered at much lower percentage of income burdens. Affordability concerns, involving household budget trade-offs and payment troubles less intense than the loss of service appear to be triggered at the 6% to 8% percentage of income burden levels.

possible financial exposure for the time of the enrollment is established. At no time, can the maximum financial exposure exceed the budgeted program revenues. Systems can be easily designed to track funds that are obligated and expended to ensure that the budget is not exceeded. In contrast, benefit expenditures through either a straight percentage of income program or a percentage of bill program may vary based upon changes in consumption.

### ***Addressing Arrearages.***

The second critical component to a low-income COVID-19 response involves arrearage management. An arrearage management program component is designed to reduce pre-program arrears to a manageable level over an extended period of time. Through an arrearage management program, a customer earns credits toward his or her preprogram arrears over a period of time, so long as the customer remains on the bill affordability program. By the end of the time period, the household's preprogram arrears will be reduced to \$0.

An arrearage management program component is necessary to help get low-income customers "even" so they have a chance at future success in making payments. It makes no difference to have *current* bills be affordable if the household is subject to service termination for *past due* bills incurred before the program began (known as preprogram arrears). In addition, it makes no sense to have current bills be affordable if the total bill is unaffordable due to payment obligations required to retire past arrears.

While some utilities simply forgive all arrears brought into a bill affordability program at the time the program begins, most utilities provide arrearage management over an extended period of time. In the latter situations, the time period over which to provide preprogram arrears credits needs to stay within the reasonable planning horizon of the customer. The program design recommended here incorporates an arrearage management period of one year. Arrearage credits are earned on a monthly basis.

No prerequisite is proposed for the offer of arrearage management credits. While at first blush, it may seem desirable to make the grant of credits toward preprogram arrears contingent upon full and timely payment of current bills,<sup>64</sup> there are both policy and operational reasons not to do this.

First, there are the operational issues. To implement such a contingent credit, the local utility would need to develop an information system process that determines, on a monthly basis, not only whether the full bill has been paid, but whether the bill has been paid on a timely basis. Depending on the answer to those inquiries, different bills will be generated by the utility (either

---

<sup>64</sup> When bill affordability programs were first designed, there was a tendency to think of credits toward preprogram arrearages as an "incentive" for low-income customers to make their current bill payments on a full and timely basis. That belief has been since largely abandoned.

one reflecting an arrears credit or one not reflecting such a credit). Layering a process for “curing” missed payments adds further administrative complexity.

Second, from a policy perspective, program administrators have learned that the best “incentive” for making full and timely payments is to have customers taking service pursuant to the bill affordability program be subject to the same credit and collection processes as all other customers. In addition, creating layer upon layer of “incentives” for payments clouds the fundamental underlying proposition. That proposition posits that, in recognition of the underlying unaffordable burden posed by utility bills at fully-embedded rates, the low-income customer is allowed to take service under the bill affordability program. Given that utility response to unaffordability, customers then have the responsibility to make full and timely payment of their bills irrespective of any further “incentive.”

Accordingly, nonpayment for service provided under the bill affordability program will be met by placing the customer into the same collection process as that which would be faced by any other customer. Nonpayment does not result in mere suspension from the program. Nor does it result in the mere loss of arrearage management credits. Nonpayment under the bill affordability program will place the program participant in the collection process.

This program proposal recommends that AMP participants make a monthly payment toward preprogram arrears. In this fashion, customers with minimum levels of payment troubles will not receive credits toward their arrears. In addition, in this fashion, AMP customers will bear some responsibility for their preprogram debt.<sup>65</sup>

The requirement of a customer copayment toward a preprogram arrears, however, should not interfere with the underlying affordability goals of the bill affordability program. Accordingly, rather than setting a customer copayment at some arbitrary dollar level, this proposal recommends setting the customer copayment level equal to a percentage of income. In this fashion, the payments toward preprogram arrears are explicitly tied to affordability considerations.

The proposed preprogram arrears customer copayment for this program is set equal to one percent (1%) of household income. The operation of such an approach, given assumed different levels of preprogram arrears is demonstrated in the table below. A household with an income of \$10,000 would make a 1% copayment over a one-year period ( $\$10,000 \times 0.01 = \$100/\text{year}$ ). Accordingly, if that customer has a pre-program arrears of \$600, the customer would receive an arrearage management credit of \$500 ( $\$600 \text{ arrears} - \$100 \text{ copayment}$ ). A customer with an

---

<sup>65</sup> However, some utilities have decided that the cost of developing a billing capacity for the customer copayment is not merited by the amount of revenue produced by the copayment process. These utilities provide credits toward 100% of the preprogram arrears.

income of \$25,000 would make a copayment of \$250 over a one-year period. Accordingly, if that customer had a pre-program arrears of *less than* \$250, he or she would receive no arrearage management credit. In contrast, if that customer had a pre-program arrears of \$600, the customer would receive an arrearage management credit of \$350 (\$600 arrears - \$250 copayment).

Operation of a Burden-Based Arrearage Management Customer Copayment							
Income	Years of Copayment	Copayment		Arrearage Management Credits by Level of Pre-Program Arrears /b/			
		Income Pct	Customer Pyt/a/	\$150	\$300	\$600	\$900
\$5,000	1	1%	\$50	\$100	\$250	\$550	\$850
\$10,000	1	1%	\$100	\$50	\$200	\$500	\$800
\$15,000	1	1%	\$150	\$0	\$150	\$450	\$750
\$20,000	1	1%	\$200	\$0	\$100	\$400	\$700
\$25,000	1	1%	\$250	\$0	\$50	\$350	\$650
\$30,000	1	1%	\$300	\$0	\$0	\$300	\$600

NOTES:

/a/ Years of payment x {income x income percent}.

/b Level of preprogram arrears minus dollar amount of copayment.

In sum, five critical components of the proposed arrearage management component of a COVID-19 response are proposed above:

- Arrears are to be retired over a one-year period;
- Customers are to make copayments toward their arrears;
- Copayments are to be set equal to an affordable percentage of income (1% per year);
- No pre-condition is established for the grant of arrearage management credits; and
- The appropriate response to nonpayment is to place the program participant in the same collection process as any other residential customer.

***The Need for Continuing Crisis Assistance.***

The third critical component of a COVID-19 response involves crisis intervention. The need for a crisis intervention program arises from three different attributes of low-income households, each of which has been discussed in some detail above.

- First, one attribute of low-income households is their lack of cash assets to allow them to weather the storm of unexpected expenses or unexpected loss of income. Low-income households do not have the ability to withstand, for example, a significant expense associated with a family emergency, such as the loss of income associated with such an emergency. Given such exigencies, the likelihood exists that some proportion of customers taking service under the COVID-19 bill affordability program will have occasional exigencies that can be met through a crisis intervention program.
- Second, one attribute of a low-income household is that low wage workers tend to be hourly wage workers. The overwhelming majority of these workers lack paid leave. The need for either medical leave, or family care leave, in other words, leads directly to lost income when paid leave is not provided. The lack of paid leave time may directly affect the ability of a working poor customer to maintain payments on their monthly utility bill. A person working 35 hours a week on hourly wages may lose three days of work simply due to a sick child missing school and requiring care. If no paid leave time exists for that employee, the sick child translates into permanently lost wages.
- Third, low wage workers tend to have lower quality jobs, often marked by considerable income fluctuations due to the number of hours they are called upon to work. The number of lost hours, and thus the amount of lost wages, is referred to as involuntary part-time employment. This fact of unstable income presents no commentary on the working poor individuals themselves. Rather it reflects the nature of work in which the working poor find themselves.

Given these attributes of the target population, the crisis component of the bill affordability program provides a budget to provide crisis intervention assistance on an as-needed basis.

Crisis intervention assistance should not be based on income eligibility such as that established for the rate affordability assistance. Crisis intervention is as frequently triggered by unusual expenses as by persistently low-income. A senior citizen facing medical expenses, as well as a working poor household facing lost income due to a sick family member, may be marginally capable of paying their monthly bills but for their unusual expenses. The agency or community-based organization administering crisis interventions should be provided the flexibility to distribute crisis intervention funding on an as-needed basis rather than be bound by income limitations.

Given this, assistance provided through the crisis intervention component should be on a limited-time basis. The crisis intervention is intended to help meet financial exigencies rather than to provide monthly rate affordability assistance to customers.

As a general rule, bill affordability programs in the United States set their crisis funding component equal to a multiplier of the total rate affordability assistance. Common percentages range from 5% to 6% of the total program budget. This proposal recommends a crisis fund equal to 5% of the total rate affordability assistance. These funds can best be distributed through existing crisis assistance programs, such as THAW or local community action agencies.

In sum, five critical components of the crisis intervention program are proposed above:

- The crisis intervention program component should be set at a multiple of the rate affordability program. The recommended multiple is 0.05 (5%).
- The crisis intervention component should not be based on income-eligibility;
- The crisis intervention component should provide administering agencies with the flexibility to distribute assistance on an as-needed emergency basis;
- The crisis intervention component should be on a limited-time basis; and
- The crisis funding should be distributed through existing crisis intervention programs.

### ***Addressing Energy Consumption***

The fourth critical component to a bill affordability program involves the delivery of energy efficiency services. Successful implementation of a conservation and demand management program relies on the creation of an ongoing partnership between local community-based organizations (CBOs) and the local utility. The local utility should combine efforts with local CBOs so as to maximize utility investment in cost-effective energy savings measures and maximize total investment in the non-energy savings measures that depress utility benefits.

### **Setting Funding Levels**

Conceptually, “adequate” funding of the low-income conservation and demand management program means that the utility’s low-income conservation and demand management budget should increase until the company exhausts its cost-effective measures. While, in theory, the utility should continue to fund its conservation and demand management programs until the program’s marginal costs equal the marginal benefits, in reality, no such “full” funding is ever



provided. In light of this, there may seem to be no principled basis upon which to set a low-income conservation and demand management budget. Nonetheless, *one* principle does seem appropriate for regulators to adopt. The extent of low-income conservation and demand management funding should be sufficient to ensure that there are no lost opportunities in any given year.

Lost opportunities arise when the accomplishment of some given task precludes the future accomplishment of additional work at that same dwelling. One frequent lost opportunity involved with similar utility programs, for example, involves unused institutional capacity. Assume the institutional capacity of low-income service providers is 8,000 homes per year in a given utility service territory. These service providers might include local contractors, CBOs involved with delivering conservation and load management services, and other for-profit or non-profit institutions. If the combined budget of low-income programs funds only 6,000 homes a year, there is a lost opportunity to increase the conservation and demand management in 2,000 homes. By assumption, the maximum capacity is 8,000 homes per year. That capacity thus cannot be pushed to 10,000 for a year to “make up” the earlier lost opportunity.

Another lost opportunity arises when cost-effective usage reduction measures are left on the table. To the extent that a low-income household might receive new appliances, but not air sealing, for example, it is unlikely that the same (or any different) program would at a later date revisit the home to install the air sealing. The opportunity to implement the usage reduction measure is lost at the time of the initial delivery of services.

Clearly, the two parts of this analysis would need to be combined. There will be unused capacity both in the number of units done per year and in the investment per unit.

The recommendation advanced in this proposal is that utility funding should be of sufficient magnitude to ensure that there is no unused institutional capacity to deliver cost-effective low-income conservation and demand management service. Stated another way, funding should be adequate such that no lost opportunities occur within the realm of cost-effective low-income conservation and demand management. The local utility’s low-income conservation and demand management budget should increase until the company exhausts its cost-effective measures, or until it exhausts the institutional capacity to deliver cost-effective measures, whichever comes first.

### **Targeting Efficiency Investments**

Maximizing benefits to all utility customers, whether through reduced traditional energy and capacity costs or through the reduction of costs associated with low-income payment troubles, is

dependent upon an appropriate targeting of the low-income program. Two primary alternative decision rules exist to guide targeting a low-income efficiency program:

- To target those with the highest energy usage, believing that these households present the greatest potential for energy savings; or
- To target those with the greatest payment problems, believing: (a) that payment problems and high usage are positively associated; and (b) that these households present the greatest potential for improved energy affordability.

To a certain extent, the difference between the two principles is artificial if one accepts the premise that conservation and demand management can not only generate traditional avoided costs, but can generate avoided costs associated with a reduction in payment troubles as well. It has become well-established over the years that payment-troubles are often associated with higher than average utility consumption. By targeting customers with payment troubles, in other words, a utility implicitly targets its high use customers as well.

One corollary to the targeting of conservation and demand management to high use, payment-troubled customers involves the benefits derived by a utility that seeks to fully integrate its conservation and demand management functions with other low-income initiatives pursued by the company, itself. This integration may well most commonly fall within the marketing stage of the conservation and demand management program.

This process is perhaps best explained by illustration. The issue of a utility's obligation to integrate its offer of conservation and demand management measures with its deferred payment plans for low income households, for example, was raised in a 1991 rate case involving Central Maine Power company (CMP) before the Maine Public Utilities Commission (PUC). In that proceeding, the staff of the PUC submitted testimony concerning CMP's marketing of "energy management services" to low-income customers.

According to information presented in that proceeding, there is a positive correlation between high arrears balances and high usage. The company, according to the PUC staff, "should pursue the implications of the [recent study of payments plans] and undertake a marketing effort that targets high use, low-income customers." The company, according to the staff testimony, was not effective in its marketing.

The state Office of Public Advocate agreed. According to that office, CMP could significantly reduce its write-offs and collection costs by providing energy management services to high usage customers on special payment arrangements. The Public Advocate said that the utility could have

saved as much as \$2 million a year “if CMP ha(d) been successful in delivering its Insulation Plus and Bundle Up programs to its special payment arrangement customers.”

The Maine PUC acted favorably on the criticisms of the lack of action by Central Maine Power. According to the Commission:

The successful marketing of energy management programs to low-income customers, particularly low-income customers on special payment arrangements, has a clear benefit above and beyond the capacity or energy savings generally associated with demand-side management programs. Low income customers that see a reduction in their bills will be able to manage their bills better. The Company’s carrying costs associated with late-paid bills and uncollectibles, which are generally passed on to other ratepayers, should be reduced.

The PUC directed the company to take remedial action.

In sum, aside from the issue of appropriately targeting its low-income conservation and demand management program, one final question to be pursued in designing a utility-funded low-income conservation and demand management is whether the utility has adequately integrated its low-income conservation and demand management program into all aspects of the company’s operation. As illustrated by Maine’s special payment arrangements, it is possible for a company to use low-income conservation and demand management to improve the efficiency and effectiveness of other customer service activities directed toward low-income payment-troubled customers.

### **A Consideration of the Needs of Multi-Family Housing**

Focusing the delivery of energy efficiency and other usage reduction investments based on high usage and/or high arrearages should take care not to exclude multi-family housing. While energy usage in multi-family buildings is often lower than energy usage in single-family homes on a per unit (or per household) basis, energy usage is often substantially less efficient in multi-family buildings.

The data is set forth in the 2009 Residential Energy Consumption Survey (RECS) published by the U.S. Department of Energy’s (DOE) Energy Information Administration (EIA). The data shows that for both usage and expenditures, while multi-family buildings have lower figures on both a per-household and a per-household member basis than do single-family homes, the intensity of usage (and expenditures) on a per square foot basis is considerably higher.

Table 14. Summary Household Site Consumption and Expenditures in Midwest Region  
Totals and Intensities, British Thermal Units and Dollars, 2009<sup>66</sup>

	Site Energy Consumption			Energy Expenditures		
	Per Household (million Btu)	Per Household Member (million Btu)	Per Square Foot (thousand Btu)	Per Household (Dollars)	Per Household Member (Dollars)	Per Square Foot (Dollars)
Single-Family	126.1	47.2	46.3	\$2,204	\$826	\$0.81
Single-Family Detached	128.0	47.6	46.1	\$2,243	\$834	\$0.81
Single-Family Attached	98.6	41.5	50.0	\$1,646	\$692	\$0.83
Multi-Family	69.4	37.8	72.5	\$1,236	\$672	\$1.29
Apartments in 2-4 Unit Buildings	102.6	49.0	80.2	\$1,673	\$800	\$1.31
Apartments in 5 or More Unit Buildings	51.9	30.5	66.0	\$1,005	\$589	\$1.28

Addressing the inefficiency of energy usage (and thus energy expenditures) in multi-family buildings should not be overlooked based on a decision rule targeting housing units based on high consumption (or high arrearages). Some portion of dollars should be specifically earmarked to address inefficient use in multi-family buildings.

### **Summary**

In sum, six critical components of the conservation and demand management program component of a COVID-19 bill affordability response are proposed above:

- Low-income conservation and demand management funding should be funded at a rate adequate to ensure no lost opportunities are left on the table;
- Efficiency investments should be targeted not only on the basis of high usage, but on the existence of payment troubles as well;
- A full range of conservation and demand services should be delivered, including but not limited to energy audits and air sealing, weatherization, heating and cooling systems, and lighting and appliance upgrades;

<sup>66</sup> EIA/DOE, Residential Energy Consumption Survey, Table CE1.3

- The utility’s outreach for the conservation and demand management programs should be tied into other aspects of its customer service operations, including the management of arrears;
- The low-income conservation and demand management investments should be delivered in collaboration and in partnership with existing conservation and demand management and affordable housing programs; and
- A specific earmark should be made to address the inefficiency in multi-family buildings.

#### **PART 4. CONTINUING CUSTOMER SERVICE PROTECTIONS**

Aside from the comprehensive response to COVID-19 presented above, the State of Michigan should require the ongoing offer of three particular customer service protections related to COVID-19:

- An ongoing moratorium on the disconnection of service for nonpayment during the pendency of the economic crisis that can reasonably be attributable to COVID-19;
- The waiver of residential late payment charges for the period during which nonpayment service disconnections are limited; and
- Specific requirements regarding the offer of long-term deferred payment arrangements for customers who are not income-eligible for the arrearage management initiative discussed above.

Each of these recommendations is discussed in more detail below.

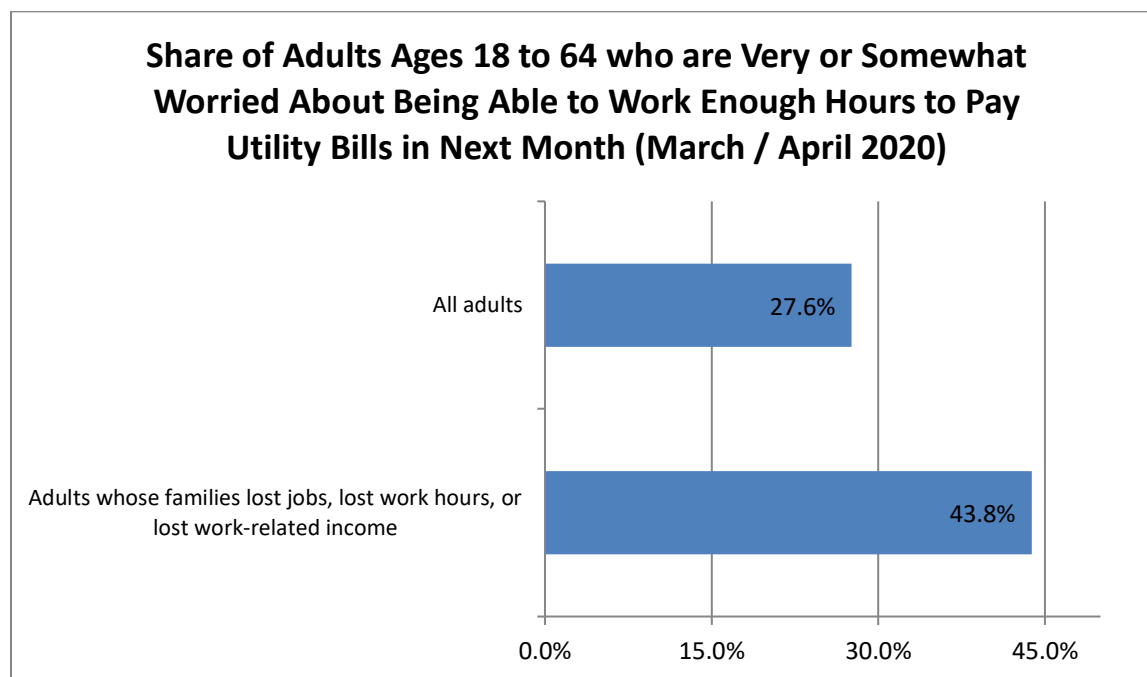
##### ***Suspending Nonpayment Disconnections for the Duration of the Economic Crisis.***

The State of Michigan should continue a moratorium on nonpayment service disconnections during the duration of the economic crisis associated with COVID-19. The reduction in COVID-19 cases and deaths attributable to such a treatment or vaccine is directed toward marking the end of the public health emergency. As discussed in detail above, however, the economic crisis can be expected to continue, and perhaps even deepen, for additional time beyond the time the public health crisis is being addressed. Continuing the suspension of nonpayment disconnections would allow the state, and its low-income customers, to recover economically.

A moratorium is justified on the basis of mitigating the costs of COVID-19 and preserving revenues from unnecessary loss. Moreover, utility shutoffs are an ineffective and inefficient collection device upon which to rely during the economic crisis related to COVID-19.

Nonpayment disconnections are an ineffective and inefficient collection mechanism to use during the COVID-19 economic crisis. During a time marked by an economic crisis such as is documented above, nonpayment of utility bills is most likely caused by an inability-to-pay rather than an unwillingness to pay. Utility nonpayment service disconnections, and the threat thereof, thus do not serve the function that they are generally viewed as serving. The first function is to generate payments in response to a notice of impending service disconnection. Since, however, nonpayment is occurring due to a lack of household resources, as opposed to a lack of willingness to pay, a notice of an impending disconnection does not add resources to a household's budget.

There can be little question but that households who can pay make every effort to pay. The discussion in Part 1 above presented data on the percentage of households who have failed to make utility bill payments. In addition, that same study documented the percentage of households who worry about their ability to work sufficient hours to be able to pay their utility bills each month.<sup>67</sup>



As can be seen, customers are aware of their payment obligations, and have sufficient intent to pay those obligations that they are “very or somewhat worried about” whether their household

---

<sup>67</sup> Urban Institute, *supra*, at 14.

will have sufficient resources to make those payments. Sending a shutoff notice, as well as actually disconnecting service, does not generate the additional income to address those worries.

Nonpayment shutoffs, and the accompanying shutoff notices, do not serve the function of incentivizing customers to make utility payments during the COVID-19 economic crisis. One article of faith in the utility industry is that warning households of an impending nonpayment service disconnection will generate a customer contact with the utility to “work things out.” This assertion, however, is set forth simply as an article of faith. No documentation has been produced to support this assertion.

In fact, however, work has been performed in the mortgage industry in very similar circumstances to determine why customers do (or do not) respond to written notices of default to contact their creditor. In research that is directly analogous to the utility context, Harvard University’s Joint Center for Housing Studies reported about mortgage nonpayments: In all of the cases of foreclosure alternatives – whether for home retention or when the borrower voluntarily gives up the home – the borrower must talk with the servicer. Loans that self-cure quickly without intervention from the servicer are not of much concern, but a borrower that has no contact with their servicer is missing out on the many effective options available for foreclosure avoidance – hurting not only themselves but also causing investor costs to rise.

While contacting the financial institution that services your mortgage may seem a simple task to many, a 2005 ground breaking survey of delinquent Freddie Mac borrowers by Roper and Freddie Mac found many substantial barriers to this important communication. Specifically, the survey revealed that on the effectiveness of servicer outreach, 75 percent of the delinquent borrowers who responded to the survey said they remembered being contacted by their loan servicer by letter or phone. However, a substantial percentage gave a variety of reasons for neglecting to follow-up with their servicers to discuss workout options. Among them were: 28 percent who said there was no reason to talk to their servicers or that their servicers could not help them; 17 percent who said they could take care of their payment problems without any help; and 7 percent who said they didn’t call because they didn’t have enough money to make the payment. Another 6 percent cited embarrassment, 5 percent didn’t respond out of fear and another 5 percent said they didn’t know whom to call.<sup>68</sup>

What we learn from this mortgage study, in other words, is that, just like mortgage foreclosures (and the written notices warning consumers of an impending foreclosure on default), shutoffs

---

<sup>68</sup> Amy Crews Cutts and William Merrill (March 2008). Interventions in Mortgage Default: Policies and Practices to Prevent Home Loss and Lower Costs at 9 – 10, Joint Center for Housing Studies, Harvard University (Cambridge: MA).

(and the written notices warning consumers of an impending shutoff for nonpayment) are not likely to be effective as a collection device. This is particularly true in an era of economic disruption never previously experienced.

In fact, research demonstrates that utility shutoffs, and the associated shutoff notices, are frequently counter-productive from the perspective of generating long-term payments to the utility. A utility cannot assume that the termination of service for nonpayment is the best mechanism available to minimize nonpayment and maximize payment, particularly amongst inability-to-pay customers. Indeed, using the disconnection of service as a collection tool can be counter-productive to a utility's own self-interest (and that of its ratepayers) in a variety of circumstances. In particular, using the disconnection of service as a collection mechanism is counter-productive in those instances where non-payment is attributable to an inability-to-pay rather than to an unwillingness to pay.

A study prepared for the federal LIHEAP office (within the U.S. Department of Health and Human Services) found that when a customer is faced with a nonpayment disconnection, all too frequently, the customer is faced with an immediate need (*i.e.*, bill payment by a date certain) with the available constructive responses to an inability-to-pay unable to deliver assistance either in the form, the time period, or the magnitude necessary to meet that need. Given the immediate consequences of failing to address the short-term nonpayment crisis, the customer is pushed into negative actions. Bad choices might include, but are certainly not limited to, borrowing money (thus increasing their future financial burdens, making future nonpayment even more likely), forgoing the payment of one essential service (e.g., rent) to pay another essential service (e.g., utilities) (again, leading to increased future bill payment obligations with an increased likelihood of future default), and running from their obligations (which not only leaves the obligation outstanding, but imposes its own series of increased costs).

A continuing reliance on service disconnections as a collection tool ignores this teaching. Rather than helping to resolve the nonpayment problem, the service disconnections place customers in the position where they will time-and-again be faced with similar future problems. The consequences yield not only adverse results to the customer, but yield adverse results to the utility, in its capacity as a utility, as well.

There are other ways, as well, in which nonpayment disconnections during the COVID-19 pandemic economic crisis are likely to be counter-productive as a means to control nonpayment (and associated nonpayment costs). One assumption that underlies any argument that nonpayment service disconnections will help to control costs to the utility is that the disconnection of service will, with reasonable certitude, be followed by a reasonably prompt reconnection of service, accompanied by a payment of all or some substantial portion of the disconnection amount as a pre-condition of reconnection. This assumption breaks down during



the COVID-19 economic crisis. As explained below, during the COVID-19 pandemic, it is more likely that, when an unpaid balance pushes a customer to the point where service is disconnected for nonpayment, that customer will have insufficient resources to repay those arrearages along with his or her bill for current service in the near-term future.

Moreover, service disconnections are often used as the foundation for consumers to seek public and private assistance to address the underlying unpaid account balance and thus generate revenue for the utility. The assumption of the adequate availability of such funds also breaks down during the COVID-19 pandemic. The unpaid account balances incurred by lower-income households will outstrip the ability of public assistance programs such as LIHEAP to address. Not only will crisis situations extend beyond the income eligibility that has traditionally been associated with LIHEAP, for example, but, in addition, the sheer magnitude of economic crisis will extend beyond the point where public and private crisis assistance funds will be sufficient to provide adequate assistance.

Many in the utility industry view the potential disconnection of service for nonpayment as one of the primary collection tools to be exercised against customers who fail to pay their bills. Without the threat that nonpayment might result in the loss of service completely, this belief asserts, customers will simply stop paying their bills.

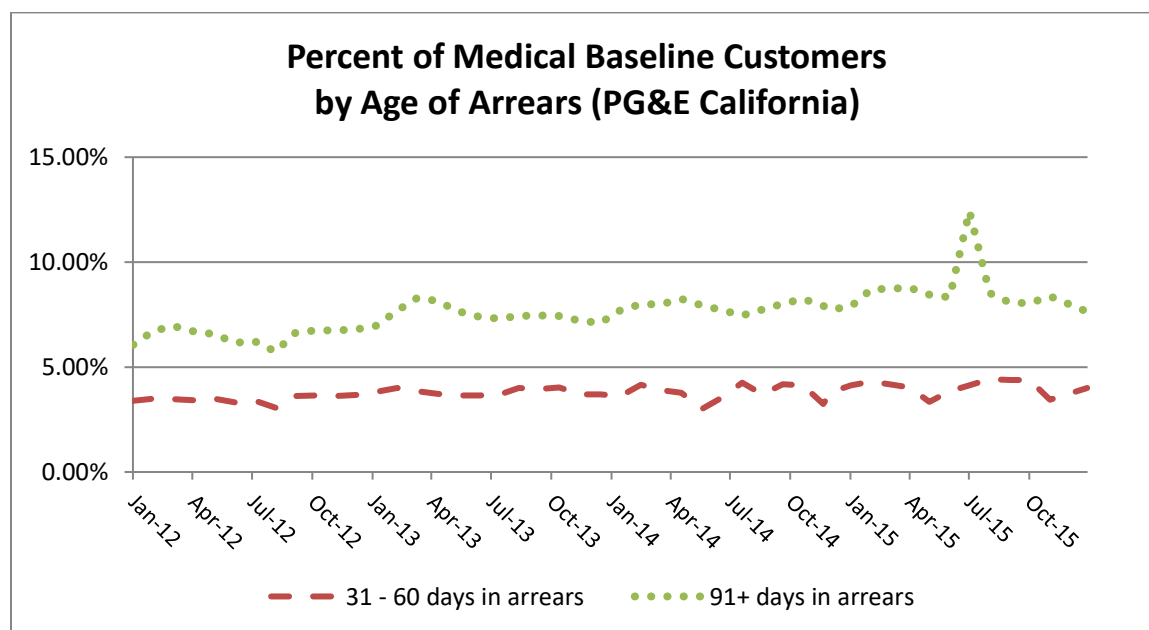
The available data finds that these concerns are unfounded. Indeed, existing data does not support the conclusion that shutoff restrictions substantially alter customer payment practices. The California Public Utilities Commission (CPUC) has adopted what it calls its “medical baseline” program. Medical baseline protections are available when a customer, or someone sharing the customer’s home full-time, requires certain medical equipment for life-support or specific illnesses. CPUC regulations provide that medical baseline customers: (1) may not receive utility communications regarding the potential for disconnections for nonpayment; (2) must have an in-person visit, including by a field person who can provide an opportunity for a payment, prior to a disconnection of service for nonpayment; and (3) may not be subject to remote disconnections for nonpayment.

The California shutoff restrictions for medical baseline customers do not result in a systematic nonpayment by customers protected by the PUC’s regulations. This Chart below tracks the arrearage patterns of PG&E’s medical baseline customers over a four-year (48 month) period. The age of arrearages tracked include arrearages old enough to represent two missed payments (aged 31 – 60 days) as well as arrearages that are deemed to begin to reach the stage of concern about lack of payment (more than 90-days). This Chart presents the percentage of all medical

baseline customers in each month that carry an arrearage balance of the stated age.<sup>69</sup> The PG&E data supports two conclusions:

- Medical baseline customers do not represent a substantial threat of nonpayment as represented by an aged arrearage; and
- The percentage of medical baseline customers with the older arrearages is remaining flat over time.

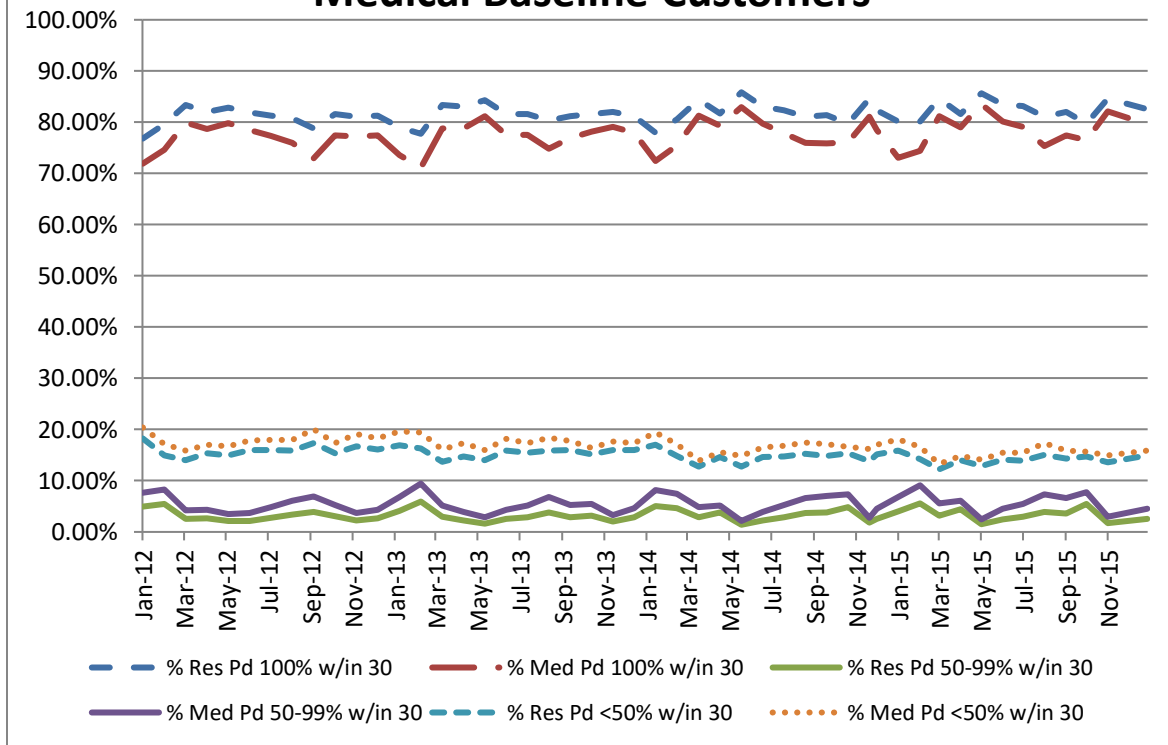
If concerns about systematic nonpayment were based in fact, neither of these observations would be correct. If concerns about shutoff restrictions were well-founded, the percentage of medical baseline customers with arrears over the age of 90 days would be large and they would be increasing. In contrast, the 90-day arrears represent fewer than 10% of the medical baseline customers, while the 31 – 60 days arrears are roughly five percent (5%).



The Chart below demonstrates this same conclusion on a month-by-month basis, not by looking at what bills remain unpaid, but instead by looking at the extent to which bills are paid. Using data reported to the California PUC, this Chart compares the portion of the monthly bill paid each month by residential customers as a whole and the portion of the monthly bill paid by customers protected from shutoffs by the PUC’s medical baseline shutoff restrictions.

<sup>69</sup> The numerator in each percentage is the number of medical baseline accounts with the arrearage by age; the denominator is the total number of medical baseline accounts.

## Bill Payment by Total Residential and by Medical Baseline Customers



There is no dispute that residential customers overall perform somewhat better than do medical baseline customers. That, of course, is to be expected given the limited ability-to-pay of the medical baseline customers with which to begin. Nevertheless, several observations are evident from a review of the data presented in the Chart. First, the vast majority of medical baseline customers pay their bill in full (i.e., pay 100%) on a monthly basis. Second, there is no long-term divergence between the percentage of medical baseline customers who pay their bills in full and the percentage of total residential customers who pay their bills in full. The medical baseline customers who are protected by restrictions on service disconnections closely mirror the residential customers who have no such restrictions. Third, there is no seasonal divergence between the total residential population and the medical baseline population. The seasonal variations in bill payment patterns that appear for the total residential population appear almost identically for the medical baseline population.<sup>70</sup>

The same observations can be made about both customers who pay less than half of their bill on a monthly basis, as well as about the customers who pay more than half, but less than 100%, of

<sup>70</sup> It should be noted that merely because one does not pay in full before the due date does not mean that the arrears become long-term overdue. A customer who pays two days late (i.e., on Day 22 rather than on Day 20) is, for purposes of Figure 2, nonetheless counted as having paid “less than half” of their bill in that month.

their bills on a monthly basis. The difference between the two populations is small; the trend over the four-year period does not indicate a divergence between the two populations;<sup>71</sup> and the seasonal variations in payments are nearly identical between the two populations.

The medical baseline shutoff restrictions in California are not tied to cold weather protections. Some shutoff restrictions throughout the country, however, are specifically tied to cold weather. I turn to a review of the impact of those restrictions next.

Using the “bills behind” tool developed by the Pennsylvania BCS,<sup>72</sup> amongst other metrics, I undertook a study of Iowa utility bills and payments over a three-year period (June 1998 through May 2001).<sup>73</sup> As just described, the BCS “bills behind” statistic eliminates the effects that the size of a customer’s bill has on that customer’s arrearages. The analysis of the payment impacts of the Iowa winter moratorium considered metrics testing the payment patterns of winter utility bill payments. Payment outcomes were measured by whether customer make (1) complete payments; and (2) regular payments.<sup>74</sup>

The Iowa data documents that the number of bills behind that Iowa LIHEAP recipients incurred fluctuated within a very narrow band over the course of the year. While arrears unquestionably went up during the high cost winter months, the increase was not substantial. In the June 1998 – May 1999 period, the “bills behind” in January through March were virtually identical to the “bills behind” in July through October. During the June 1999 - May 2000 and the June 2000 – May 2001 periods, the “bills behind” during the winter months were actually *lower* than the bills behind for the corresponding non-heating / non-moratorium months.

These observations are not intended to suggest that low-income arrears do not increase in the high cost winter months. Instead, the most significant observation from this Iowa data is that rather than experiencing a dramatic increase in the number of bills behind during the winter moratorium months, resulting from a decrease in the amount and/or frequency of payments attributable to winter shutoff restrictions, the weighted arrears (i.e., “bills behind”) for Iowa LIHEAP customers fluctuated within a very narrow band.

---

<sup>71</sup> If customers protected by medical baseline regulations regularly failed to pay their bill, an increasing proportion of customers would appear as having paid “less than 50%” of their bill. This would occur because those payments that were made would be applied against arrearages, leaving an increasing proportion of bills for current service unpaid.

<sup>72</sup> Joseph Farrell (1983). *Utility Payment Problems: The Measurement and Evaluation of Responses to Customer Nonpayment*, at 19, Pennsylvania Public Utility Commission: Harrisburg, PA.

<sup>73</sup> Colton (November 2003). “Winter Weather Payments: The Impact of Iowa’s Winter Utility Shutoff Moratorium on Utility Bill Payments by Low-Income Customers.” 16(9) *Electricity Journal* 59.

<sup>74</sup> I previously set forth metrics through which payment performance can be measured.

The regularity of payments during the Iowa moratorium was measured by indexing the total number payments to the total number of bills rendered each month. If “some” payment is made on an account in any given month, there is an increased likelihood that the customer will be able to make a future payment sufficient to reduce the account balance to \$0. The March bill is easier to pay in full, in other words, if the customer has made *some* payment toward the February bill, even if the February payment is only a partial payment.

The Iowa study found that the state’s LIHEAP recipients made almost one payment for each bill they received for home energy service. These payments may not always reduce the total balance to \$0. Neither may the payments cover the entire bill for current usage (the completeness of payment was discussed above). The winter moratorium, however, does not result in LIHEAP recipients deciding to *stop* making payments on a widespread, let alone universal, basis. While the number of payments was reduced during the winter heating season, Iowa utilities tended to receive roughly eight payments for every ten bills tendered during these months.

Taking out the seemingly anomalous number of payments in October and November of 1999 (a time when supplemental LIHEAP payments were made which were small relative to the typical annual benefit and were insufficient to pay entire bills), the index of payments made to bills rendered tended to fluctuate in a narrow band of between 0.8 and 1.1 each month.<sup>75</sup>

In sum, the primary empirical study of the impact of winter shutoff restrictions in the United States found that no substantial change in payment patterns occurs as a result of the shutoff protections. An application of the bills-behind analysis to Iowa bill payment data found that residential bill payment patterns did not change in the winter months even when accounts were protected from nonpayment by shutoff restrictions. The Iowa analysis found that the number of bills-behind that Iowa LIHEAP recipients incur fluctuates within a very narrow band over the course of a year. The study found further that while the absolute dollar level of arrears unquestionably increases during the high cost winter months, the increase is not because customers miss more payments. Instead, the “bills behind” in January through March are virtually identical to the “bills behind” in July through October. Moreover, the Iowa analysis found that customers protected by shutoff restrictions do not make fewer payments. The Iowa

---

<sup>75</sup> The annual dips in the number of payments made by LIHEAP recipients in January and February do not necessarily reflect nonpayment toward outstanding accounts. Instead, the annual LIHEAP payments that are made in December and January often leave credit balances on customer accounts. These credit balances do not call for a customer payment in order for the customer to remain current on his or her account.

While a LIHEAP recipient may be well-served (as a matter of sound money management) to make a payment of any amount even in those winter months when LIHEAP has left a credit balance on the account –this means that a lower dollar payment will be required on some future bill when there is no LIHEAP offset—this rarely occurs. Accordingly, the LIHEAP payment has the impact of completely paying one month’s bill for winter heating consumption while leaving future bills to be absorbed completely out of the recipient’s monthly income at that time.

analysis found that Iowa utilities receive roughly eight payments for every ten bills tendered during the months in which shutoff restrictions are in place. On a month-by-month basis over the course of the year, the index of payments made to bills rendered in Iowa tends to fluctuate in a narrow band of between 0.8 and 1.1 each month.

The easiest and most effective way for Michigan utilities to generate revenue is to retain customers on the system. Disconnections, particularly disconnections which are not quickly followed by reconnections, not only place collections of the underlying arrears in jeopardy, but place any possible future revenue in jeopardy as well. Once someone is off-system, the only realistic opportunity to Michigan utilities to collect outstanding balances is to assign the debt to a collection firm. To the extent that firm is successful at all, from a utility's perspective, that success comes at considerable cost in terms of percentage collection fees. In today's COVID-19 economic crisis, however, the chances are slim that the collection agency would have a better success at generating payments than would the utility on its own. When households are failing to make rent and utility payments, as well as foregoing food and medical care, it is not likely that a collection agency would generate substantial revenue, if any, to collect unpaid balances from disconnected and inactive Michigan utility customers.

### ***Suspending Late Payment Charges for the Duration of the Economic Crisis.***

A second step that the State of Michigan should pursue is to continue suspend the imposition of residential late payment charges for the same duration that a shutoff moratorium is in effect. A late payment charge has two purported objectives: (1) to serve as an incentive for customers to pay their bills; and (2) to allow the utility to recover its collection costs associated with nonpayment from those customers who cause (or contribute to the cause) of those costs. Neither of these objectives applies during the COVID-19 pandemic.

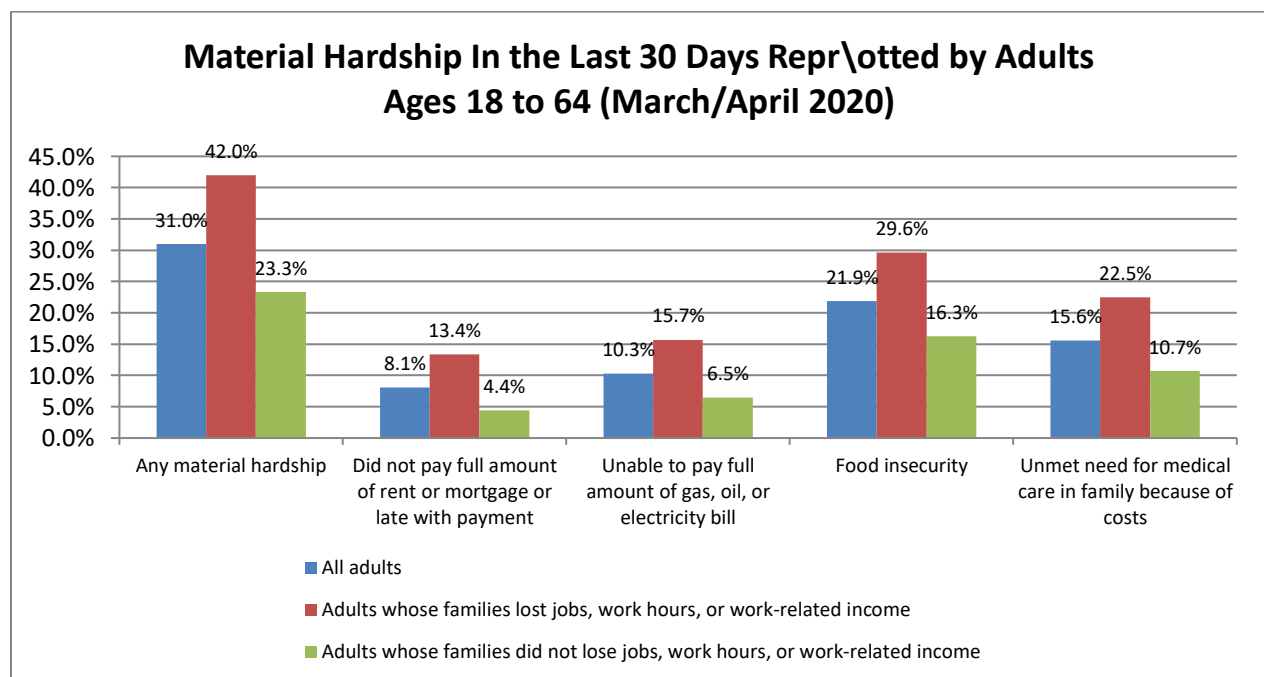
To impose a late payment charge as an "incentive" for customers to pay their bills assumes that a customer has an ability-to-pay but, for some reason, lacks the motivation to do so. As documented in detail throughout these comments, however, during the COVID-19 pandemic, lower-income customers have an even lesser ability-to-pay than they do in periods not marked by the health emergency and the economic emergencies attributable to the pandemic. That decreased ability-to-pay will continue, and very likely will get worse, during the foreseeable future.

Indeed, as with nonpayment service disconnections, from a cost-control perspective, imposing late payment charges during the economic crisis associated with the COVID-19 pandemic is likely to be counter-productive as a cost-control measure rather than productive. Two arguments are generally advanced in support of the "incentive" function of a late payment charge. On the one hand, utilities have argued that late payment charges will incentivize payments in order for

customers to avoid paying the higher bills caused by the late charge. On the other hand, utilities have argued that late payment charges will incentivize customers to pay their utility bills rather than any credit card bills that may bear equal or higher interest rates.

Neither of these arguments apply to consumer decision-making in the economic crisis associated with the COVID-19 pandemic. As shown throughout the discussion above, customers during the COVID-19 pandemic are not making the choices that late payment charges are designed to influence. Customers are not choosing to make payments between their credit cards and their utility bills. Customers are instead faced with an inability to make payments on fundamental households needs such as food, medicine and housing.

There is considerable information available on the choices that consumers are making when faced with COVID-19 related income loss. The Urban Institute study, previously cited, illuminates the choices that households are being forced to make in today’s COVID-19 pandemic world. The Chart immediately below shows the choices that people are making in the midst of the COVID-19 pandemic. As documented above, one-in-six (15.7%) of adults are unable to pay their home energy bills when they lost jobs, or suffered lost work hours or work-related income. For purposes of assessing late payment charges, however, that number does not tell the full story. Nearly one-in-three (29.6%) of adults who lost jobs/income experienced food insecurity, while nearly one-in-four (22.5%) were unable to received medical care for someone in their family because of cost. There are, in other words, people who are choosing to pay their utility bills before they are buying food or obtaining health care in the midst of the worst public health crisis in more than 100 years.

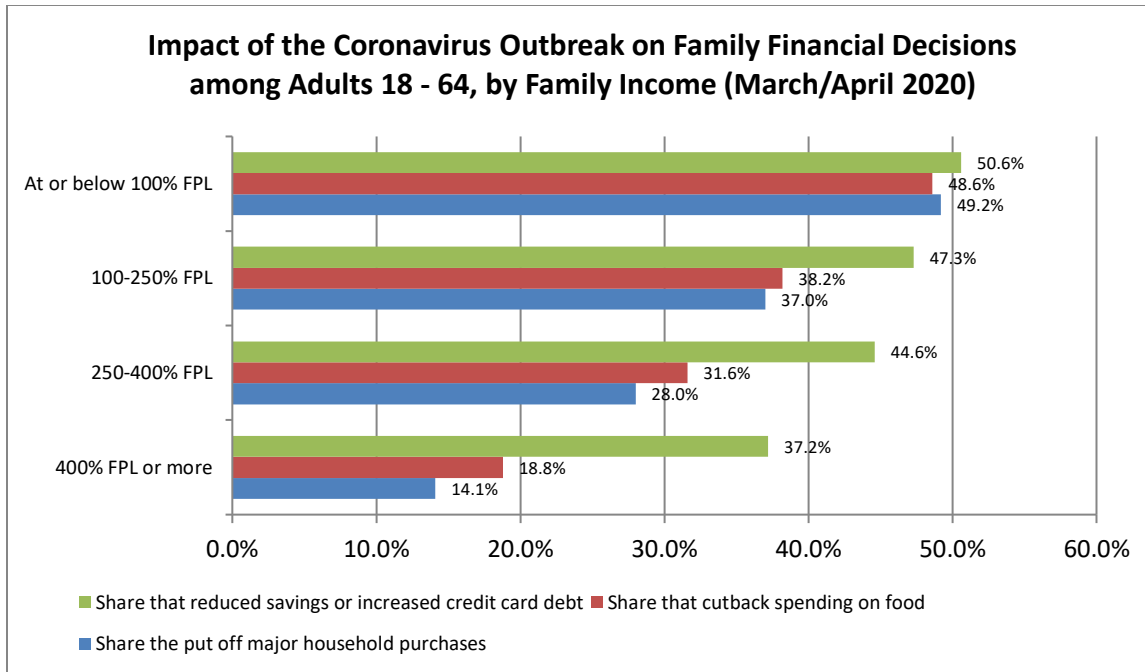


The Table below shows that these choices are exacerbated at the lowest income levels. More than one-in-four adults with income at or below 100% of Poverty could not pay their home energy bills in the past 30 days (March/April 2020). Even as income increased to between 100% and 250% of Poverty, one-in-seven (13.9%) could not pay their home energy bills. At all income levels, the Table shows, adults were choosing to pay their home energy bills before buying food or accessing medical care during this pandemic.

	By Family Income			
	At or below 100% FPL	100-250% FPL	250-400% FPL	400% FPL or more
Any material hardship %	68.6%	42.8%	28.3%	10.7%
Did not pay full amount of rent or mortgage or late with payment	21.7%	10.8%	6.2%	2.2%
Unable to pay full amount of gas, oil or electricity bills	27.5%	13.9%	8.2%	2.6%
Food insecurity	57.5%	31.0%	17.9%	4.6%
Unmet need for medical care in family because of costs	29.4%	22.3%	14.9%	6.4%

Finally, the Chart below shows that people are not simply refusing to pay (or ignoring) their home energy bills. At every income level, adults are reducing their savings or increasing their credit card debt to make their payments. These adults, however, particularly those at the lowest income levels, simply do not have sufficient resources to be able to continue months-on-end having lost their jobs, lost work hours, or suffered the loss of work-related income.





Imposing late payment charges in the circumstances described above not only “could” be counter-productive, but would almost certainly be counter-productive. Late payment charges divert scarce household resources away from the payment of bills for current service to the payment of these secondary charges. As a result, fewer resources remain for households to pay their bills for current service. By not suspending the imposition of late payment charges, Michigan utilities would be unnecessarily exacerbating the costs they incur, and the revenue they lose. Empirical research presented above showing how households, particularly low-income households, have completely drawn down emergency savings, and have incurred substantial debt as a result of COVID-19 makes it questionable whether increasing utility bills through the imposition of late payment is productive or justifiable.

***The Offer of Reasonable Long-Term Deferred Payment Plans should be Continued for the Duration of the Economic Crisis.***

Michigan utilities should make available reasonable long-term deferred payment arrangements<sup>76</sup> for customers who do not qualify for participation in the AMP recommended above for income-eligible customers. For purposes here, a customer who does not qualify for the AMP should be allowed to repay all COVID-19 arrearages over *at least* a 12-month period. That customer, however, should be allowed to do so over a term of months that does not unreasonably place the customer’s payment of bills for current service in jeopardy. The need to consider the term of a payment plan (in months) within the context of a customer’s ability-to-pay is simply sound

<sup>76</sup> References to “deferred payment plans,” “deferred payment arrangements” and other similar phrases are intended to be synonymous.

utility management. Entering into a payment plan that a customer has no reasonable likelihood of completing does not serve anyone’s interest, including the interest of Michigan utilities in minimizing revenue loss and controlling the costs of unpaid bills.

It is possible to gain some understanding about the reasons why payment plans yield such little success, and such substantial default rates. In the Table below, using 4% to demarcate an affordable percentage of income for bills for current service plus an arrearage payment, it is possible to determine the income that would be necessary to have bill payments for different arrearage levels, using a 12-month payment plan, be affordable, both in dollar terms and in terms of income as a percentage of Federal Poverty Level. The Table considers a variety of arrearage levels, using different levels of “bills behind.” Developed by the Pennsylvania PUC’s Bureau of Consumer Services, “bills behind” normalizes arrearages for usage and price. It is calculated by dividing the level of the arrearage (numerator) by the average monthly bill (denominator). An arrears of \$200 with an average bill of \$50, for example, would represent 4.0 “bills behind.”<sup>77</sup>

	Arrears As “Bills Behind”			
	3 Bills Behind	4 Bills Behind	5 Bills Behind	6 Bills Behind
Annual bill	\$1,460	\$1,460	\$1,460	\$1,460
Arrearage	\$365	\$487	\$608	\$730
Total annual payment with 12-month DPA	\$1,825	\$1,947	\$2,068	\$2,190
Affordable Pct of Income	4%	4%	4%	4%
Income Needed to Have 12-Mo DPA Affordable	\$46,625	\$48,675	\$51,700	\$54,750
Needed income as FPL Pct (3-person HH) <sup>78</sup>	210%	224%	238%	252%

The Table above demonstrates why Deferred Payment Arrangements so often fail. Even for a customer who is only three “bills behind” (given an average bill of \$1,460), the income required to make repayment of such an arrearage over a 12-month payment plan, in addition to the normal bill for current service, affordable would reach nearly \$46,625 (or 210% of Poverty for a 3-person household). For a customer who is six bills behind, the income required to make repayment of such an arrearage over a 12-month payment plan, in addition to the normal bill for current service, would reach \$54,750, or more than 250% of Poverty.

<sup>77</sup> BCS said it was important to consider bills behind in order to compare arrears of differing sizes due to differences in usage, weather, price or time. For example, while an arrearage of \$400 would historically have been considered a greater problem than an arrearage of \$200, if the \$200 arrearage was based on an average \$50 bill (4.0 bills behind) and the \$400 arrearage was based on an average \$150 bill 2.7 “bills behind,” a different reaction may be merited.

<sup>78</sup> 100% of Federal Poverty Level for a 3-person household in 2020 was \$21,720.

Several protections offered to Michigan utility customers would improve both the effectiveness and the efficiency of the Company's use of deferred payment plans as a collection tool for unpaid bill balances through the COVID-19 pandemic. These modifications include:

- **Downpayments:** During the pendency of the COVID-19 economic crisis, required downpayments should be set at no more than 10% of the outstanding delinquency.
- **Payment plan term (in months):** During the pendency of the COVID-19 economic crisis, Michigan utilities should offer a payment plan term of *not less* than 12 months.<sup>79</sup> In addition, payment plan installments should not exceed one-quarter (25%) of the average of a monthly bill for current service.<sup>80</sup>

For the reasons outlined above, the offer of these payment plan terms should extend indefinitely during the COVID-19 economic crisis.

A consideration of the appropriate payment plan structure during the economic crisis attributable to the COVID-19 pandemic is informed by the extensive empirical discussion set forth in Part 2 of these Comments. Requiring flexible payment plan terms responds to the fact that, as established in detail in Part 2: (1) the incomes of utility customers will vary widely depending on what region of the State a customer lives; (2) the utility bills for current service will vary widely depending on what region of the State a customer lives; and (3) what bills would be “affordable” will, as a result of the first two observations, vary widely based on what region of the State a customer lives. While a 12-month payment plan may allow a customer to successfully complete repayment of arrearages given higher incomes and/or lower bills for current service in one part of the State, that 12-month payment plan would be entirely inadequate in a different region of Michigan, demarcated by higher bills for current service and/or lower incomes.

The empirical data presented in Part 2, in other words, supports not only the need to have a comprehensive, flexible income-based affordability program to address bills for current service, that empirical data also supports the further recommendations regarding ongoing necessary consumer protections.

---

<sup>79</sup> The phrase “not less than” is not synonymous with “at” or “equal to.”

<sup>80</sup> Customers would be allowed to agree to shorter payment plans should they wish to do so. This proposal is simply that Michigan utilities must *offer* a payment plan with these terms.

## SUMMARY AND CONCLUSIONS

COVID-19 has imposed devastating adverse impacts on American households, including Michigan utility customers. In addition to the public health crisis generated by the unique coronavirus, there has been a corresponding economic crisis. Both the public health consequences and the economic consequences have fallen disproportionately hard on lower-income households. The economic crisis arises not only because people have lost jobs, which they have, but also because people have lost income even if not entirely losing their job. The income losses have fallen disproportionately on low-income households.

The economic crisis facing Michigan utility customers results in circumstances in which Michigan's customers have found it difficult to sustainably pay their home energy bills. As with the underlying public health and economic consequences of COVID-19, these payment difficulties have fallen more squarely, and to a greater degree, on low-income households than on non-low-income households.

The economic crisis cannot be expected to end any time soon. Indeed, the economic crisis facing Michigan's utility customers should be expected to long outlast the public health crisis. Not only will lost jobs, and reduced incomes, be difficult to replace, but in addition, households (including low-income households in particular) have been forced to take extraordinary measures in 2020 to respond to those lost jobs and reduced incomes. Low-income households have taken on high levels of consumer debt to replace lost income. Low-income households have also exhausted emergency savings to replace lost jobs and reduced incomes. The private safety net of personal savings and available credit no longer exists to help households address the economic crisis as it continues into 2021.

In developing utility regulatory responses to COVID-19, it is imperative that the MPSC avoid seeking to impose, or to allow utilities to impose, responsive actions that are not adequate to address the underlying problems and to address the diversity of circumstances throughout the entirety of Michigan. Empirical data demonstrates that incomes in Michigan vary widely depending on what area of the State a household lives. Empirical data further demonstrates that home energy bills are likely to vary widely depending on what area of the State a household lives.

Accordingly, the Michigan PSC should require utilities to develop a response to the COVID-19 economic emergency which is both comprehensive and flexible. The appropriate response, at this point, is to develop an affordability program that includes: (1) income-based rates for bills for current service; (2) arrearage management; (3) crisis assistance; and (4) targeted energy efficiency and usage reduction investments.

In addition, the Michigan PSC should adopt three customer service protections which should extend during the pendency of the COVID-19 economic crisis, including: (1) a continuation of any suspension of nonpayment service disconnections; (2) a continuation of the suspension of late payment charges; and (3) the offer of extended deferred payment plans.

Appendix A  
 Census Data (and Census Tables) Used in Developing these Comments<sup>81</sup>

Factor	Factor Description	Census Table
1.	Received Supplemental Security Income Public Assistance or SNAP (Food Stamps) by family type	B09010
2.	Poverty status by family type	B17019
3.	Household income (dollars)	B19001
4.	Median household income	B19013
5.	Received Supplemental Security Income	B19056
6.	Received cash public assistance	B19057
7.	Received cash public assistance or SNAP (Food Stamps)	B19058
8.	Average income by income quintiles	B19081
9.	Received Food Stamps by Poverty Status	B22003
10.	Tenure by age of householder	B25007
11.	Tenure	B25010
12.	Number of rooms	B25017
13.	Number of rooms by tenure	B25020
14.	Median number of rooms by tenure	B25021
15.	Building type by number of units	B25024
16.	Building type of number of units by tenure	B25032
17.	Year structure built	B25034
18.	Year structure built by tenure	B25036
19.	Year moved in by tenure	B25038
20.	Number of bedrooms by tenure	B25042
21.	Gross rent as percent of household income	B25070
22.	Gross renter as percent of household income by income	B25074
23.	Mortgage status by selected monthly owner costs as percent of household income	B25091
24.	Primary heating fuel by tenure	B25117
25.	Median household income by tenure	B25119
26.	Ratio of annual income to Federal Poverty Level	C17002

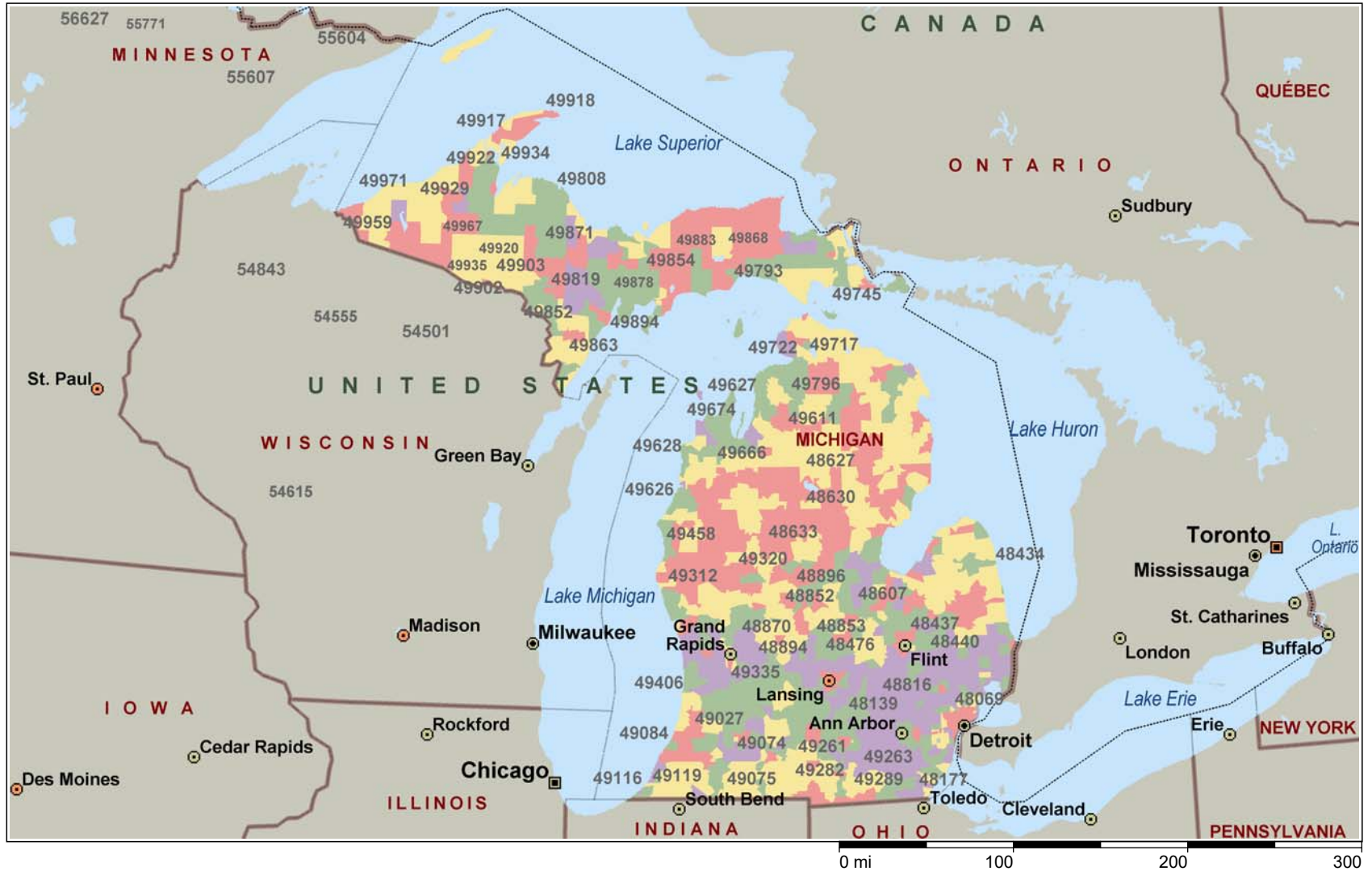
<sup>81</sup> Not all Census data was directly incorporated into the narrative discussion above.

## Appendix B: Michigan Maps

Map 1--Pct\_200% FPL by ZIP Code

Pct <200% FPL by ZIP Code

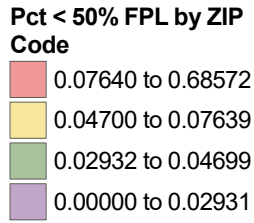
- 0.4120 to 1.0000
- 0.3265 to 0.4119
- 0.2330 to 0.3264
- 0.0000 to 0.2329







Map 2--Pct\_ 50% FPL by ZIP Code

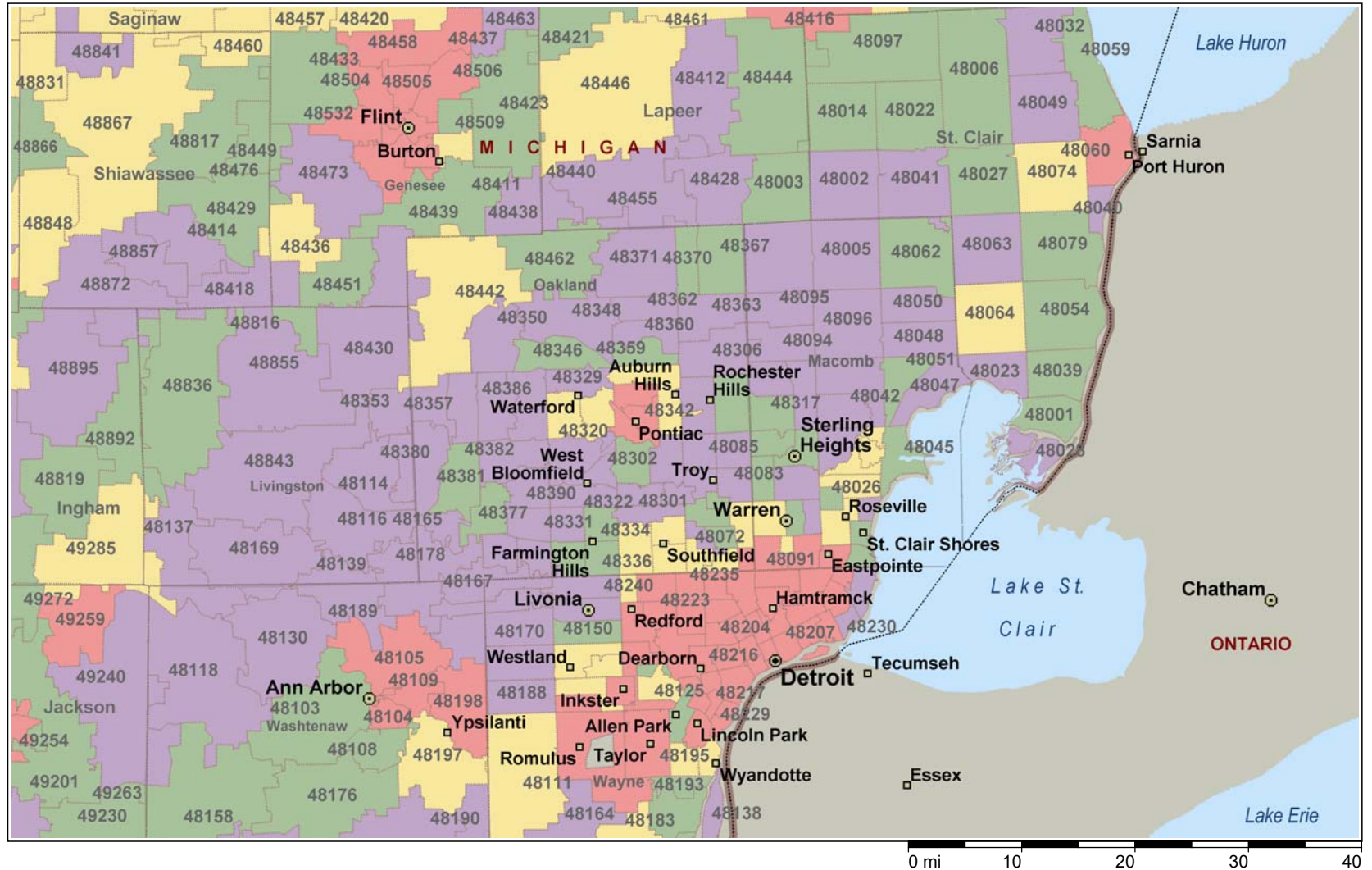


Copyright © and (P) 1988–2006 Microsoft Corporation and/or its suppliers. All rights reserved. <http://www.microsoft.com/mappoint/>  
 Portions © 1990–2005 InstallShield Software Corporation. All rights reserved. Certain mapping and direction data © 2005 NAVTEQ. All rights reserved. The Data for areas of Canada includes information taken with permission from Canadian authorities, including: © Her Majesty the Queen in Right of Canada, © Queen's Printer for Ontario. NAVTEQ and NAVTEQ ON BOARD are trademarks of NAVTEQ. © 2005 Tele Atlas North America, Inc. All rights reserved. Tele Atlas and Tele Atlas North America are trademarks of Tele Atlas, Inc.

Map 2A--Close-up---Pct\_ 50% FPL by ZIP Code

**Pct < 50% FPL by ZIP Code**

- 0.07640 to 0.68572
- 0.04700 to 0.07639
- 0.02932 to 0.04699
- 0.00000 to 0.02931



Map 3--Pct\_ \$10,000 by ZIP Code

**Pct <\$10,000 by ZIP Code**

- 0.0778 to 0.5000
- 0.0528 to 0.0777
- 0.0330 to 0.0527
- 0.0000 to 0.0329



Map 4--Pct\_ \$15,000 by ZIP Code

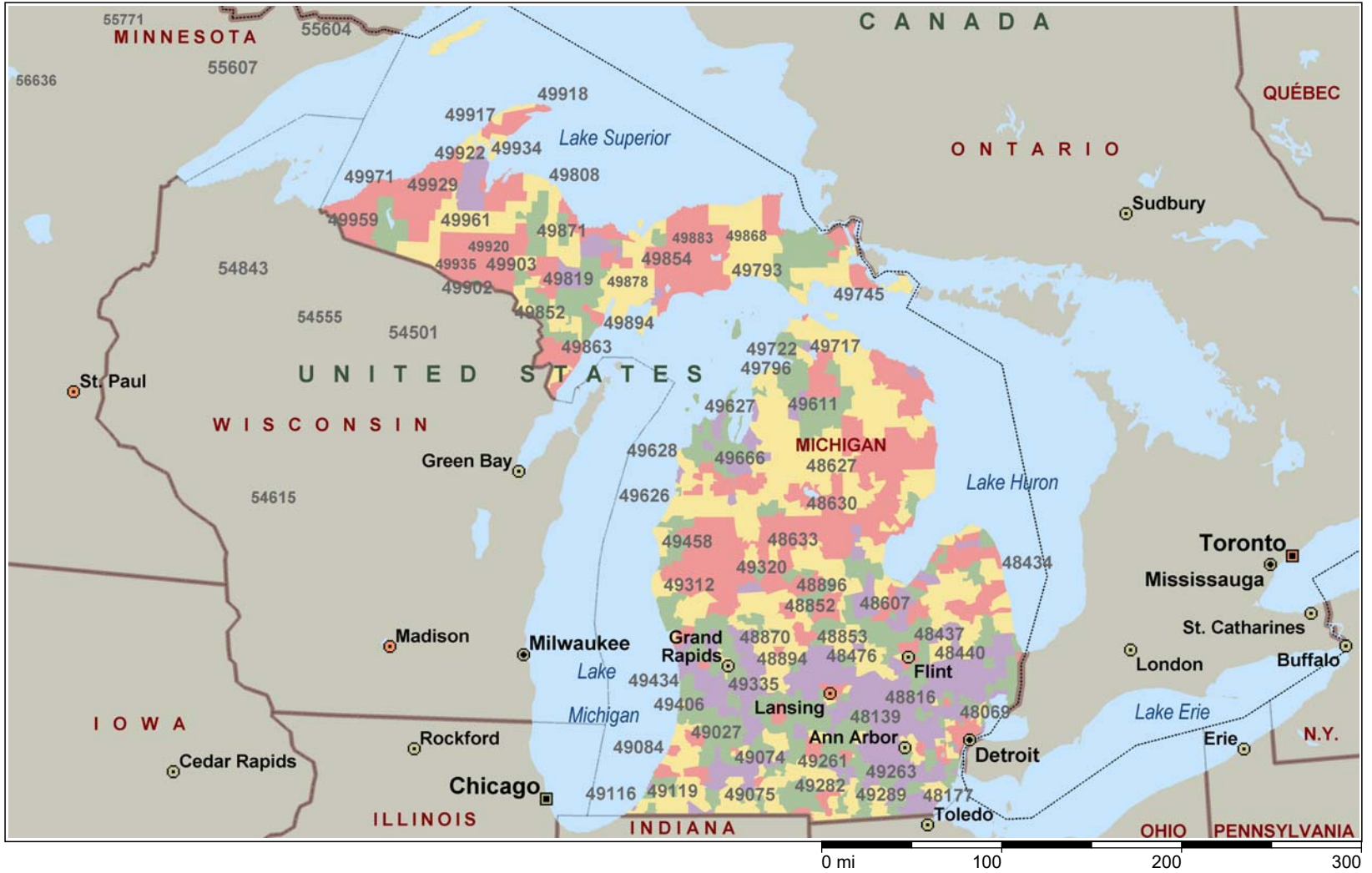
Pct <\$15,000 by ZIP Code

- 0.1396 to 0.5687
- 0.0985 to 0.1395
- 0.0648 to 0.0984
- 0.0000 to 0.0647



Map 5--Pct\_ \$20,000 by ZIP Code

- Pct <\$20,000 by ZIP Code**
- 0.205200 to 0.602041
  - 0.150830 to 0.205199
  - 0.105265 to 0.150829
  - 0.000000 to 0.105264



Map 6--Quintile Means\_ Lowest Quintile by ZIP Code

**Quintile Means: Lowest Quintile by ZIP Code**

- \$18,080.00 to \$42,993.00
- \$14,260.00 to \$18,079.00
- \$11,285.00 to \$14,259.00
- \$2,270.00 to \$11,284.00







### Map 7--Affordable at 3% Income by ZIP Code

**Affordable at 3% Income by ZIP Code**

- \$543.00 to \$1,290.00
- \$429.00 to \$542.00
- \$339.00 to \$428.00
- \$68.00 to \$338.00



Copyright © and (P) 1988–2006 Microsoft Corporation and/or its suppliers. All rights reserved. <http://www.microsoft.com/mappoint/>  
 Portions © 1990–2005 InstallShield Software Corporation. All rights reserved. Certain mapping and direction data © 2005 NAVTEQ. All rights reserved. The Data for areas of Canada includes information taken with permission from Canadian authorities, including: © Her Majesty the Queen in Right of Canada, © Queen's Printer for Ontario. NAVTEQ and NAVTEQ ON BOARD are trademarks of NAVTEQ. © 2005 Tele Atlas North America, Inc. All rights reserved. Tele Atlas and Tele Atlas North America are trademarks of Tele Atlas, Inc.

Map 8--Affordable at 6% of Income by ZIP Code

**Affordable at 6% of Income by ZIP Code**

- \$1,148.00 to \$2,580.00
- \$932.00 to \$1,147.00
- \$777.00 to \$931.00
- \$640.00 to \$776.00
- \$136.00 to \$639.00

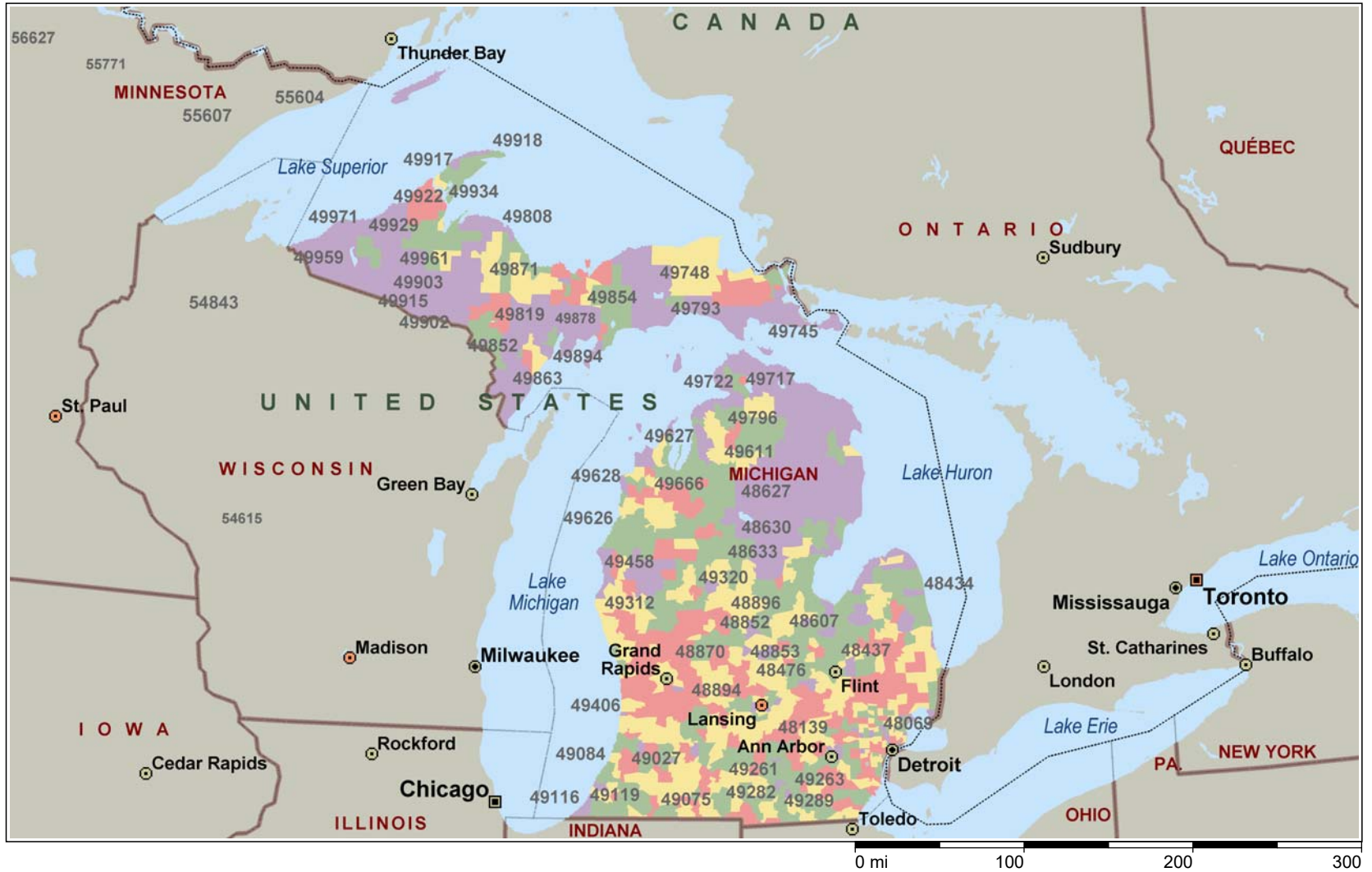




Map 9A--3% Affordable at 100% FPL by ZIP Code

**3% Affordable at 100% FPL by ZIP Code**

- \$576.00 to \$900.00
- \$554.00 to \$575.00
- \$532.00 to \$553.00
- \$390.00 to \$531.00



Copyright © and (P) 1988–2006 Microsoft Corporation and/or its suppliers. All rights reserved. <http://www.microsoft.com/mappoint/>  
 Portions © 1990–2005 InstallShield Software Corporation. All rights reserved. Certain mapping and direction data © 2005 NAVTEQ. All rights reserved. The Data for areas of Canada includes information taken with permission from Canadian authorities, including: © Her Majesty the Queen in Right of Canada, © Queen's Printer for Ontario. NAVTEQ and NAVTEQ ON BOARD are trademarks of NAVTEQ. © 2005 Tele Atlas North America, Inc. All rights reserved. Tele Atlas and Tele Atlas North America are trademarks of Tele Atlas, Inc.

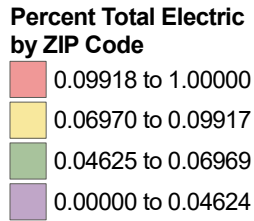
Map 9B--6% Affordable at 100% FPL by ZIP Code

- 6% Affordable at 100% FPL by ZIP Code**
- \$1,152.00 to \$1,799.00
  - \$1,108.00 to \$1,151.00
  - \$1,065.00 to \$1,107.00
  - \$780.00 to \$1,064.00





### Map 10B--Percent Total Electricity by ZIP Code

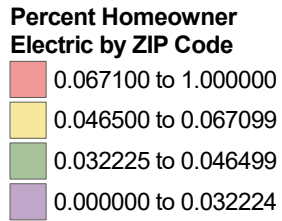


Copyright © and (P) 1988–2006 Microsoft Corporation and/or its suppliers. All rights reserved. <http://www.microsoft.com/mappoint/>  
 Portions © 1990–2005 InstallShield Software Corporation. All rights reserved. Certain mapping and direction data © 2005 NAVTEQ. All rights reserved. The Data for areas of Canada includes information taken with permission from Canadian authorities, including: © Her Majesty the Queen in Right of Canada, © Queen's Printer for Ontario. NAVTEQ and NAVTEQ ON BOARD are trademarks of NAVTEQ. © 2005 Tele Atlas North America, Inc. All rights reserved. Tele Atlas and Tele Atlas North America are trademarks of Tele Atlas, Inc.





Map 10D--Percent Homeowner Electricity by ZIP Code



Copyright © and (P) 1988–2006 Microsoft Corporation and/or its suppliers. All rights reserved. <http://www.microsoft.com/mappoint/>  
 Portions © 1990–2005 InstallShield Software Corporation. All rights reserved. Certain mapping and direction data © 2005 NAVTEQ. All rights reserved. The Data for areas of Canada includes information taken with permission from Canadian authorities, including: © Her Majesty the Queen in Right of Canada, © Queen's Printer for Ontario. NAVTEQ and NAVTEQ ON BOARD are trademarks of NAVTEQ. © 2005 Tele Atlas North America, Inc. All rights reserved. Tele Atlas and Tele Atlas North America are trademarks of Tele Atlas, Inc.

# Map 10E--Percent Renter Gas by ZIP Code

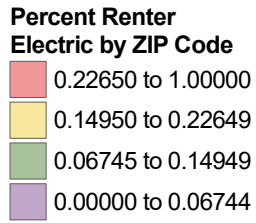
## Percent Renter Gas by ZIP Code

- 0.7605 to 1.0000
- 0.6160 to 0.7604
- 0.4040 to 0.6159
- 0.0000 to 0.4039



Copyright © and (P) 1988–2006 Microsoft Corporation and/or its suppliers. All rights reserved. <http://www.microsoft.com/mappoint/>  
 Portions © 1990–2005 InstallShield Software Corporation. All rights reserved. Certain mapping and direction data © 2005 NAVTEQ. All rights reserved. The Data for areas of Canada includes information taken with permission from Canadian authorities, including: © Her Majesty the Queen in Right of Canada, © Queen's Printer for Ontario. NAVTEQ and NAVTEQ ON BOARD are trademarks of NAVTEQ. © 2005 Tele Atlas North America, Inc. All rights reserved. Tele Atlas and Tele Atlas North America are trademarks of Tele Atlas, Inc.

### Map 10F--Percent Renter Electricity by ZIP Code



Copyright © and (P) 1988–2006 Microsoft Corporation and/or its suppliers. All rights reserved. <http://www.microsoft.com/mappoint/>  
 Portions © 1990–2005 InstallShield Software Corporation. All rights reserved. Certain mapping and direction data © 2005 NAVTEQ. All rights reserved. The Data for areas of Canada includes information taken with permission from Canadian authorities, including: © Her Majesty the Queen in Right of Canada, © Queen's Printer for Ontario. NAVTEQ and NAVTEQ ON BOARD are trademarks of NAVTEQ. © 2005 Tele Atlas North America, Inc. All rights reserved. Tele Atlas and Tele Atlas North America are trademarks of Tele Atlas, Inc.

### Map 11--Pct Total 3 or Fewer Rooms by ZIP Code

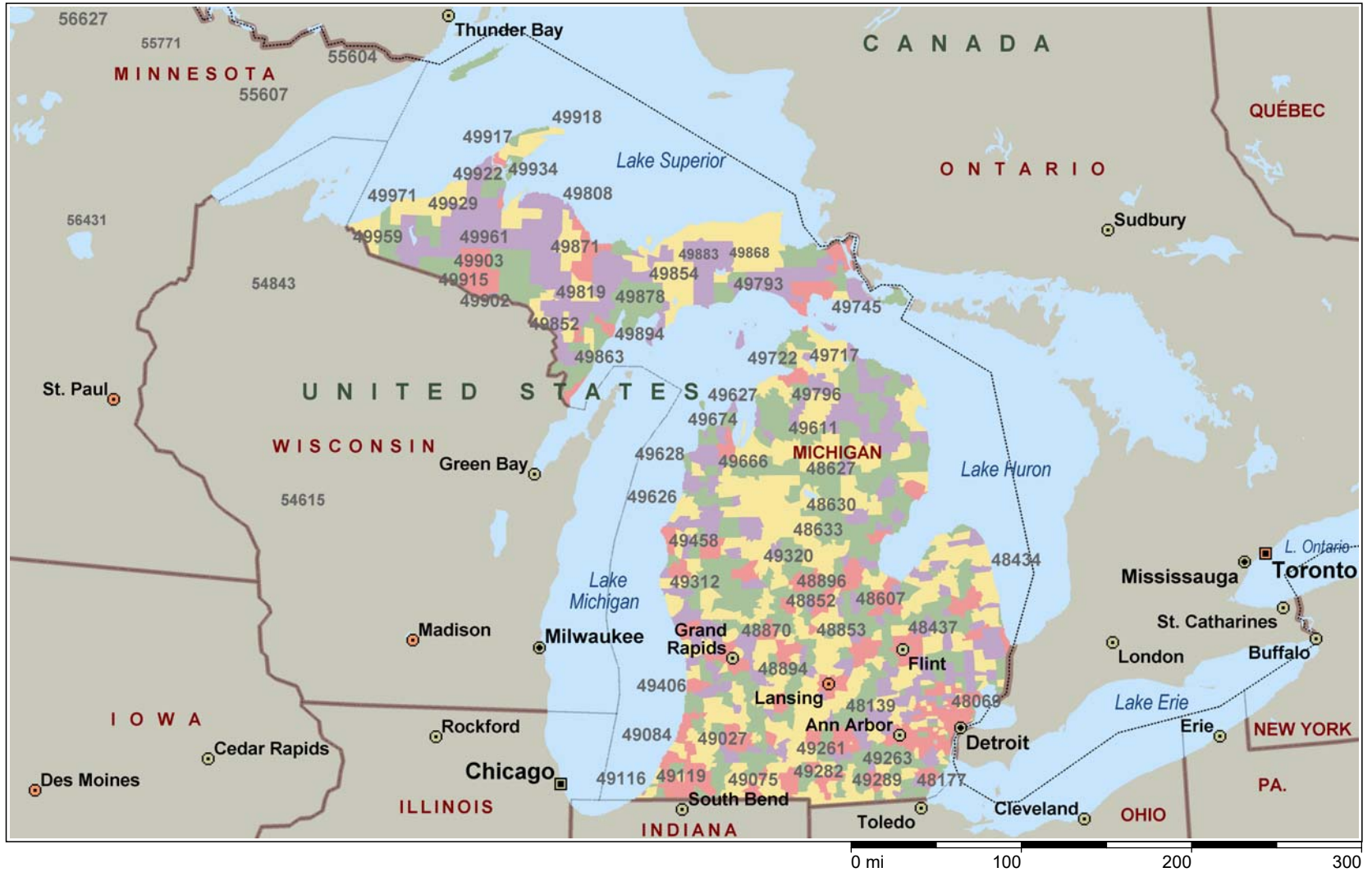
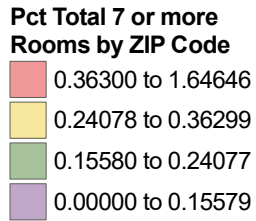
**Pct Total 3 or Fewer Rooms by ZIP Code**

- 0.3500 to 1.5926
- 0.2348 to 0.3499
- 0.1590 to 0.2347
- 0.0000 to 0.1589



Copyright © and (P) 1988–2006 Microsoft Corporation and/or its suppliers. All rights reserved. <http://www.microsoft.com/mappoint/>  
 Portions © 1990–2005 InstallShield Software Corporation. All rights reserved. Certain mapping and direction data © 2005 NAVTEQ. All rights reserved. The Data for areas of Canada includes information taken with permission from Canadian authorities, including: © Her Majesty the Queen in Right of Canada, © Queen's Printer for Ontario. NAVTEQ and NAVTEQ ON BOARD are trademarks of NAVTEQ. © 2005 Tele Atlas North America, Inc. All rights reserved. Tele Atlas and Tele Atlas North America are trademarks of Tele Atlas, Inc.

Map 12--Pct Total 7 or More Rooms by ZIP Code





Map 14--Pct Renter Built 1970 or Before by ZIP Code

