

Local Government OPEB (Other Postemployment Benefits) in Michigan

A Closer Look

MSU Extension White Paper



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Introduction

To further our understanding of the nature and level of other postemployment benefit (OPEB) provisions and benefit underfunding for local governments in Michigan, Michigan State University Extension collected and analyzed actuarial valuations from cities and townships that offer OPEB. Our previous research on OPEB provisions was based on information provided in the fiscal year 2011 annual audit reports that are filed with the Michigan Department of Treasury (Scorsone & Bateson, 2013). We had found that 311 of the 1,773 cities, townships and villages in Michigan offered some sort of OPEB benefit at the end of FY 2011. The total OPEB liability for these units of government was \$13.5 billion, which was funded at 6 percent, resulting in a net unfunded liability of \$12.7 billion.

While we were able to extract much fiscal and liability information from the audit reports using this process, the inclusion of details regarding benefit plan design and the actuarial assumptions used to develop the liability calculations was less consistent. For example, only 73 out of the 284 units of government used in our previous analysis reported the number of members in their benefit plans. An actuarial valuation report is a more detailed resource for understanding the drivers of the OPEB liability calculation. This paper will focus on reporting descriptive statistics regarding benefit plan design, actuarial assumptions and methods employed, demographics of participants and variations across labor divisions.

Methodology and Data

Collection Process

We made up to three attempts to contact 154 of the 311 units of government that offer OPEB for their actuarial valuations. Of the remaining 157 units, 27 were those that had been excluded from our initial analysis (Scorsone & Bateson, 2013) and 130 either used the alternate method or were small units by population. From each unit of government we were able to contact, we requested a copy of the valuation that was referenced in the FY2011 audit report and any valuation that had been performed since then.

We were able to collect 174 valuations from 110 unique units of government. Two units that we contacted had performed the alternate measurement method during FY2011, but provided copies of the full valuations from when they first implemented accounting standards for reporting their OPEB liabilities.¹ One unit we contacted had stopped offering OPEB since the FY2011 audit report, and we either received no response or personnel did not follow up with us from the remaining 43 units of government. For the list of units of government included in this analysis, please see Appendix A.

Sample Statistics

The valuations included in the analysis are primarily limited to the most recent valuation that each of the 110

units of government provided to us. We excluded the two units that had implemented the alternate method in FY2011, but provided a standard valuation that had been performed during a previous fiscal year. **Figure 1** compares this sample to all of the units that offer OPEB based on the findings from our analysis of the FY2011 audit reports. The units for which we obtained actuarial valuations represent 38 percent of those that provide OPEB in terms of the number of units and 58 percent of those that offer OPEB in terms of population represented.

Actuarial Sample vs. OPEB Units from FY2011 Audit Analysis

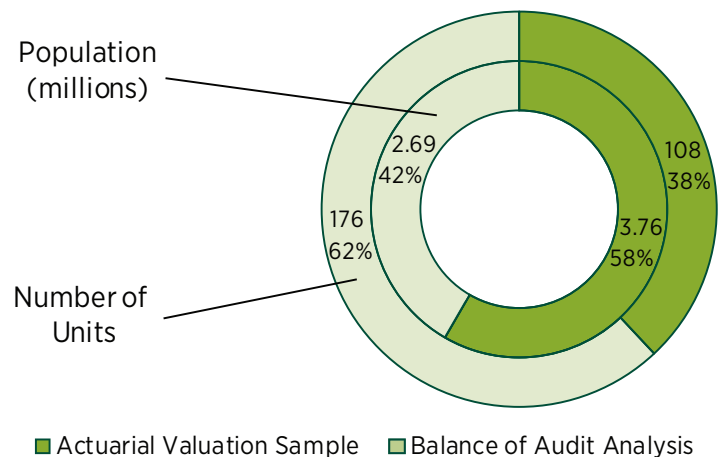


Figure 1. Actuarial Sample vs. Total OPEB Units in FY 2011.

¹ The Governmental Accounting Standards Board issued Statement No. 45 (“GASB No. 45” hereafter), “Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions” in June 2004. The implementation schedule was based on the employer’s total revenues: if \$100 million or more, effective for fiscal periods beginning after Dec. 15, 2006; if \$10 million or more but less than \$100 million, then effective for fiscal periods after Dec. 15, 2007; and, if less than \$10 million, then effective for fiscal periods beginning after Dec. 15, 2008.

Region	City	Township	Village	Total	Audit Analysis
East Central	3	1	-	4	26
Northern Lower Peninsula	3	-	-	3	15
Southeast	52	21	-	73	160
Southwest	8	7	-	15	34
Upper Peninsula	1	-	-	1	10
West Central	10	2	-	12	39
Total	77	31	-	108	284
Audit Analysis	183	80	21	284	

Table 1. Sample Observations by Government Type and Region.

Table 1 compares the sample to our previous analysis in terms of the government type and regional representation. This sample is not representative of the units of government that offer OPEB. While we were able to acquire actuarial reports from about half of the units of government in the southeast and southwest regions, representation in the other four regions is significantly lower. Representation in terms of government type is similarly skewed. About 66 percent of the cities and townships are represented, and we do not have valuations for any villages. The lack of representation from villages is mainly due to their small population size, since smaller units were excluded due to their likelihood of performing the alternate method.

Table 2 displays details of the actuarial valuations we received in terms of the year that they were performed and the type of valuation. The standards under GASB No. 45 recommend that plans with 200 or more members perform an actuarial valuation at least biennially and that plans with fewer than 200 members perform an actuarial valuation at least triennially. GASB No. 45 provides different requirements for performing the valuation based on size of the plan. Units of government must perform the standard valuation if they have 100 or more plan members but can employ an alternative measurement method if they have

fewer than 100 plan members. The alternative measurement method is a lower cost alternative for small employers for whom the standard valuation may be cost-prohibitive to perform. It uses simplifying assumptions and calculations to determine the liability and was intentionally designed to be implemented by non-specialists (Governmental Accounting Standards Board, 2004).²

Table 3 compares the sample to the audit analysis in terms of population categories represented. This sample primarily represents units that have a population between 10,001 and 200,000 people. The city of Detroit (which is the lone unit in the “More than 200,000”) and most units that comprised 30,000 or fewer residents were not included in this sample.

These summary statistics suggest that this sample of actuarial valuations is not representative of the local units of government that offer defined benefit OPEB plans based on the analysis of the FY2011 audits. This conclusion implies that one should exercise extreme caution in inferring that the trends in this report reflect the entire population of local governments in Michigan that offer defined benefit OPEB.

² See paragraphs 181 and 185 of GASB No. 45 for more information regarding the alternative measurement method.

Valuation	2007	2008	2009	2010	2011	2012	2013	Total	Audit Analysis
Standard	3	5	4	26	31	26	7	102	178
Alternate	-	-	-	-	2	2	1	5	97
Not stated	-	-	-	1	-	-	-	1	9
Total	3	5	4	27	33	28	8	108	284

Table 2. Sample Observations by Valuation Year and Valuation Method.

Population Category	Actuarial Reports		Audit Analysis	
	Local Units	Population	Local Units	Population
Less than 1,500	-	-	11	11,583
1,501 - 5,000	2	7,860	70	226,634
5,001 - 10,000	-	-	56	426,292
10,001 - 30,000	61	962,679	88	1,529,558
30,001 - 200,000	45	2,794,022	58	3,544,376
More than 200,000	-	-	1	713,777
Total	108	3,764,561	284	6,452,220

Table 3. Sample Observations by Population Category.

Key Findings

Reporting Frequency

We were able to obtain multiple actuarial valuations from 56 of the 110 units of government in this analysis. We collected two valuations each from 52 local governments and three valuations each from four local governments.

Table 4 displays the reporting frequency of the valuations in this sample. Most local governments in this sample appear to abide by the minimum guidelines outlined in GASB No. 45 with 50 units performing actuarial valuations at least triennially. Nine of these units have exceeded the minimum requirements and have performed valuations annually.

Eligibility requirements

The nature of OPEB eligibility requirements is one determinant of the level of the OPEB liability. A local government has a higher benefit obligation for a retiree that can retire early compared to one that retires later. Another factor is whether local government permits employees to retire before they are eligible for Medicare, since retirees enrolled in Medicare typically incur lower premiums than those who are not enrolled.

Local governments establish eligibility requirements for providing retirees health care benefits in a large variety of

ways. The following lists various methods we encountered in the actuarial valuations and gives examples of each:

- ▶ Single requirement based on age (60 years old regardless of years of service)
- ▶ Single requirement based on service (25 years of service regardless of age)
- ▶ Combined requirement based on age and service (55 years old and 15 years of service)
- ▶ Minimum number of points based on age and service (70 points)
- ▶ Multiple requirements based on any of the above (60 years old regardless of service, 55 years old and 15 years of service, or 50 years old and 25 years of service)

Many of these eligibility requirements also vary across labor divisions and plans within the same unit of government. The following two figures (**Figure 2** and **Figure 3** on page 4) provide a very simplified summary of the OPEB eligibility requirements for the local units of government in this analysis.

Age requirements

For each unit of government, we identified the lowest age requirement across all plans that were offered. Ninety-one out of the 108 units in our sample disclosed having a minimum age requirement. The balance either did not have

Number of Valuations	Years Between Valuations				Total
	1	2	3	4	
Two	7	29	10	6	52
Three	2	2	-	-	4
Total	9	31	10	6	56

Table 4. Reporting Frequency.

minimum age requirement or did not disclose this aspect of their provisions. As noted above, there may have been several age requirements for each different plan. If there was a service requirement associated with the lowest age requirement, this was noted as well.

Figure 2 exhibits a frequency distribution of the lowest age requirement for each unit of government along with an indication of any associated service requirements. Each

unit except for one permits employees to retire and receive benefits prior to Medicare eligibility, which commences at age 65 as long as the retiree meets other requirements. The majority of the units of government (55) permit some employees to retire starting between 50 to 54 years of age. Within this sub-population, most units also require between 20 to 29 years of service. This chart suggests a negative relationship between the lowest age requirement and restrictions on minimum service requirements.

Figure 2.
Lowest Age Requirement.

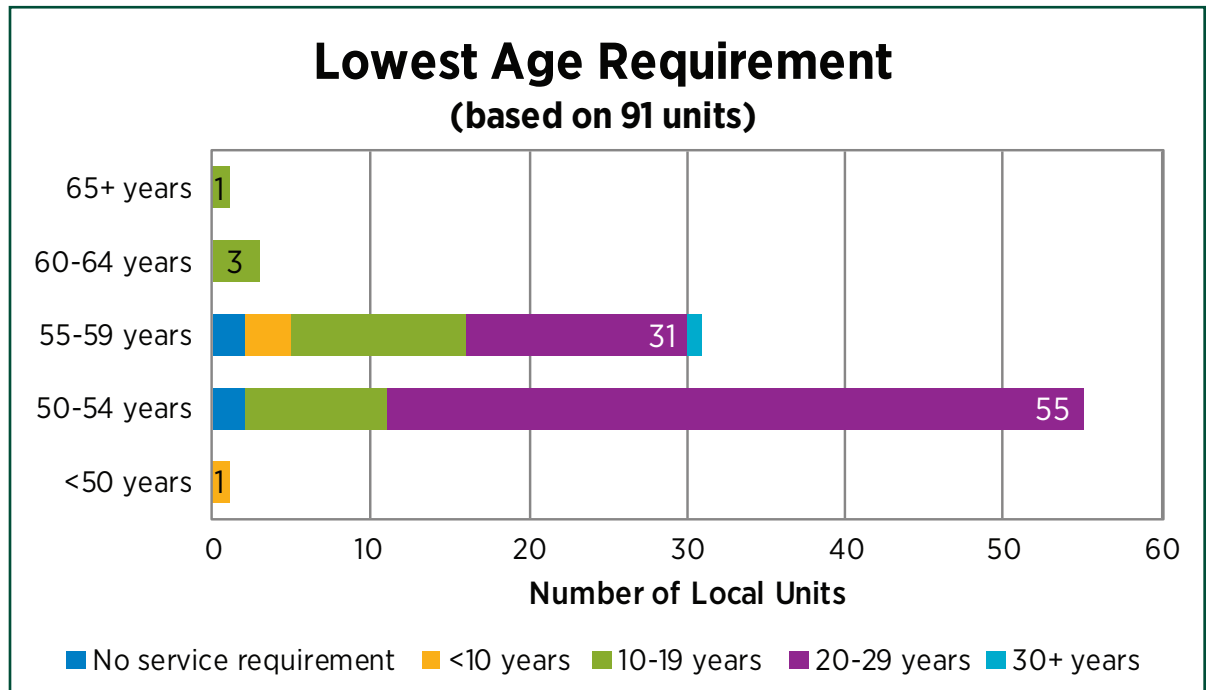
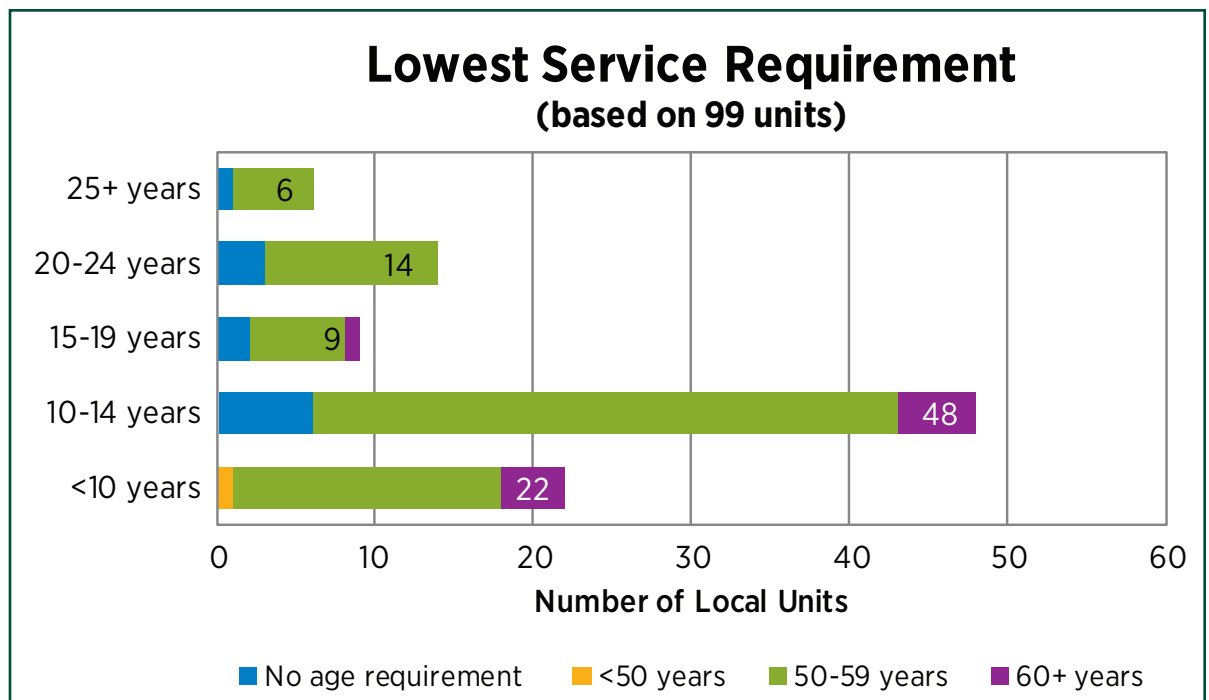


Figure 3.
Lowest Service Requirement.



However, one outlier allows employees in one labor division to retire at age 45 with only eight years of service.

Service requirements

Similarly, we also identified the lowest service requirement across all plans for each unit of government. Ninety-nine out of the 108 valuations in the sample disclosed having a minimum service requirement. The balance either did not have minimum service requirement or did not disclose this aspect of their provisions. Again, there may have been multiple service requirements. If there was an age requirement associated with the lowest service requirement, this was noted as well.

Figure 3 exhibits a frequency distribution of the lowest service requirement for each unit of government along with an indication of any associated service requirements. The majority of the units of government (70) permit some employees to retire with less than 15 years of service, though for the most part, employees must also be at least 50 years old. Of the 48 plans that provide retiree health care benefits with 10 to 14 years of service, five do not have any age requirement. Similar to the previous figure on the age requirement, this chart indicates that there is a negative correlation between the lowest service requirements and restrictions on minimum age requirements.

Benefit Provisions

The benefit level and the cost-sharing requirements are additional factors that determine the level of OPEB

obligations. The following list outlines the various types of strategies that local governments used to implement some sort of cost sharing with retirees:

- ▶ **Premium sharing:** The retiree pays for a portion of premium (percentage or fixed dollar amount), while the unit of government is responsible for the balance.
- ▶ **Complete coverage:** The unit of government pays 100 percent of premiums (less any co-pays); no cost sharing is required from retirees.
- ▶ **Tiered or pro-rated benefits:** Benefit levels vary depending on age, years of service, points, retire or hire date.
- ▶ **Benefit cap:** The unit of government caps its contribution level on an annual or monthly basis.
- ▶ **Subsidy:** The unit of government contributes a fixed dollar amount and the retiree is responsible for the balance if premiums exceed the subsidy.
- ▶ **Base plan:** The unit of government provides coverage for a base plan with an option that the retiree is responsible for additional costs associated with a more expensive plan.
- ▶ **Active employee contribution:** Active employees are required to contribute part of their salaries toward OPEB.
- ▶ **Inflation index:** The employer’s contribution is indexed to a rate independent of medical inflation.

Ninety-seven of the 108 actuarial valuations outlined the benefit provision levels. **Figure 4** exhibits a frequency distribution of the various cost-sharing strategies with an

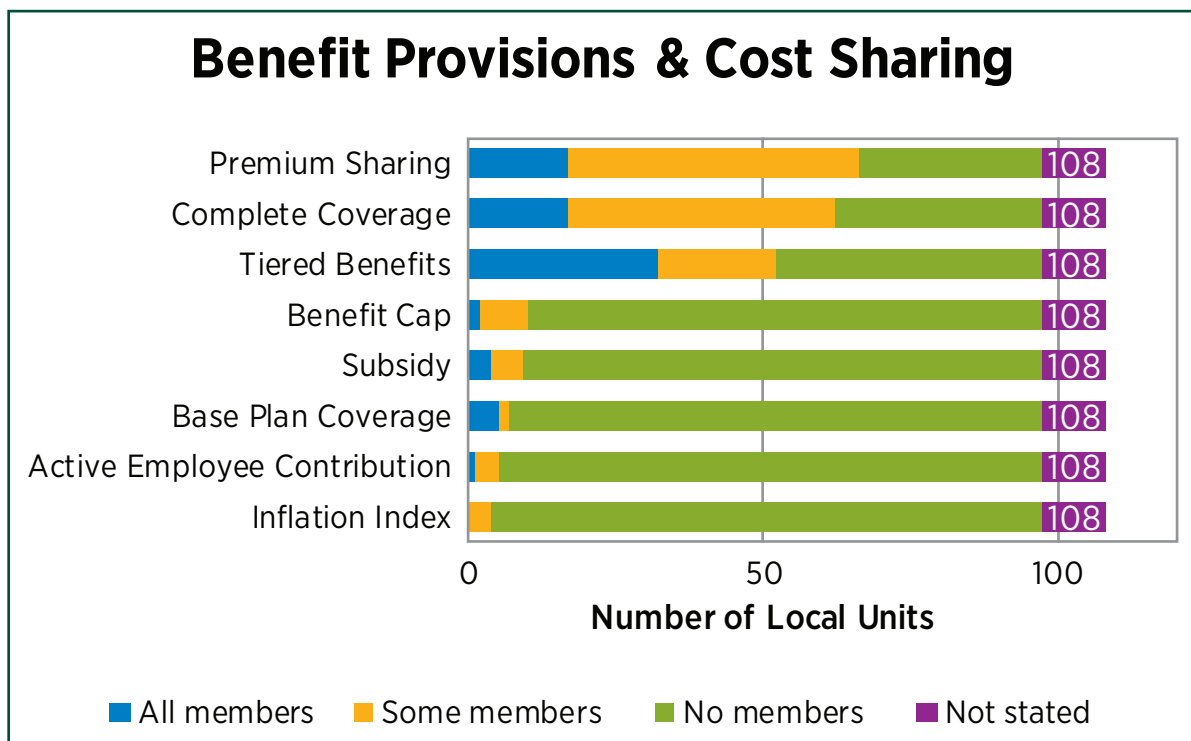


Figure 4. Benefit Provisions and Cost Sharing.

indication of whether the strategy applies to all members, some members or no members of the unit of government's retiree health care plan(s). This figure applies only to medical insurance, which typically comprises the bulk of OPEB. The most common strategies are requiring premium sharing from retirees, offering complete coverage and offering a tiered benefit plan based on age, years of

service or hire date. The remaining strategies were rarely implemented.

In addition to medical insurance, OPEB can also comprise dental, vision, prescription drug, and life and disability insurance coverage. Some local governments also offered an opt-out provision that allows retirees to receive a cash payment in lieu of benefits. **Figure 5** displays a frequency

Figure 5. Additional Benefits and Provisions.

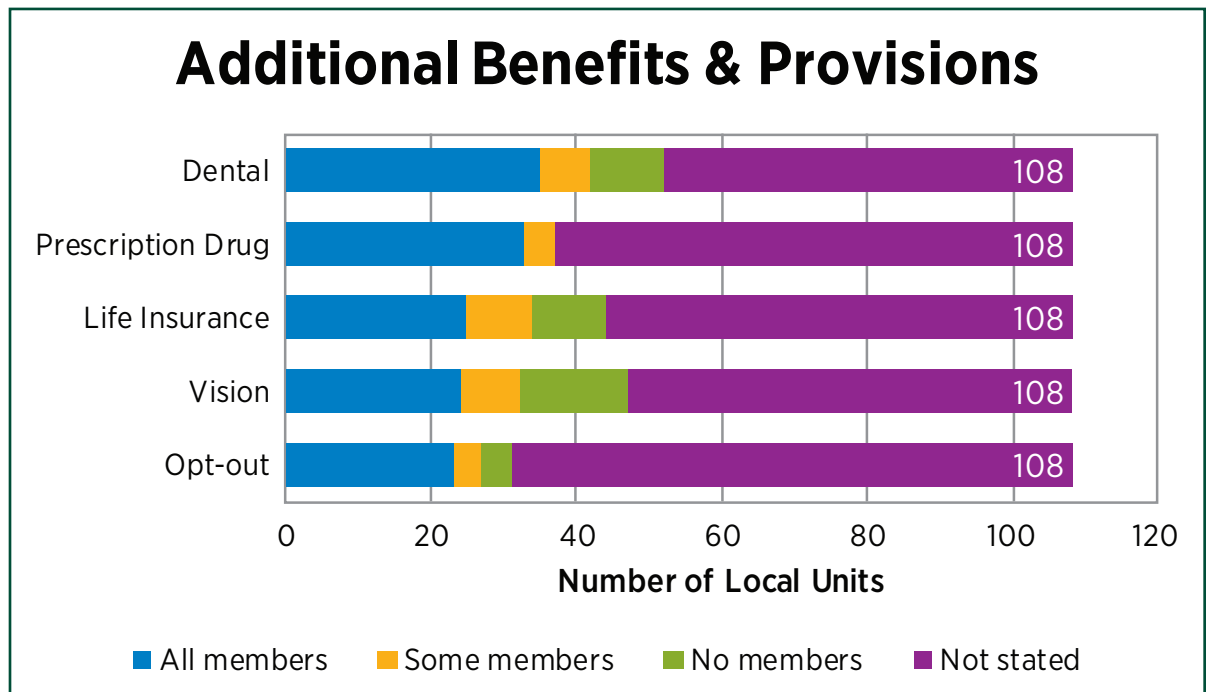
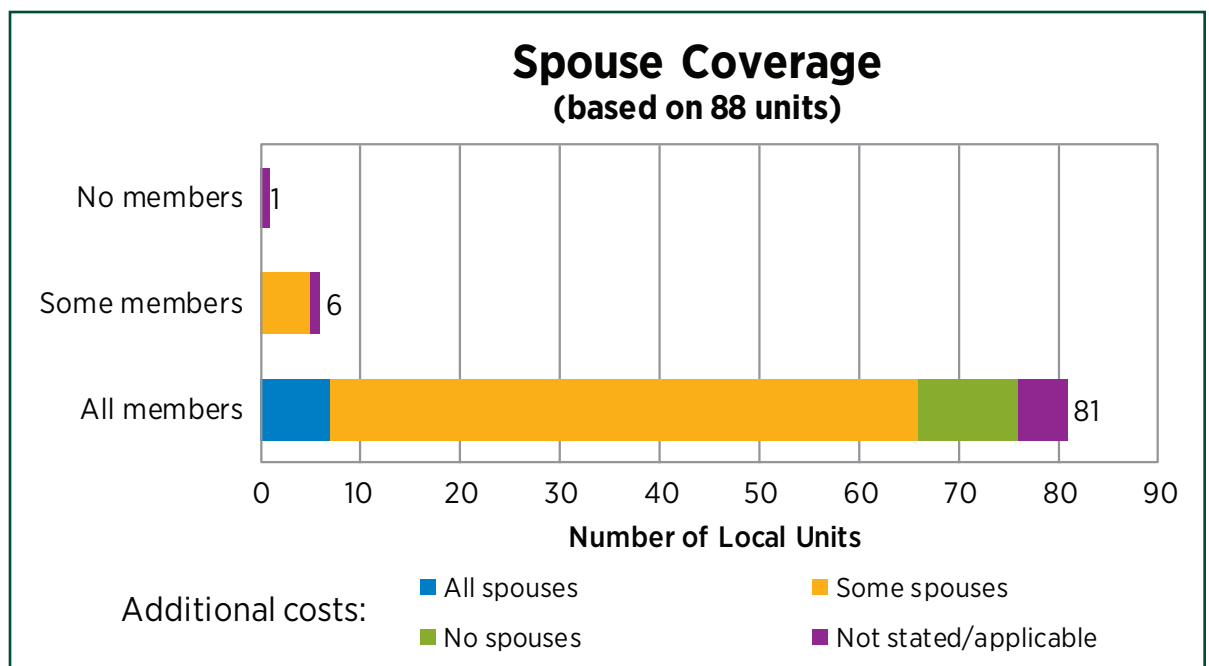


Figure 6. Spouse Coverage.



distribution of additional benefits and provisions, except for disability insurance, which was fairly standard, especially for duty-related incidents. This figure indicates whether or not the unit of government offers coverage for all members, some members or no members of their plan(s), or if it was not stated in the actuarial valuation. Dental and prescription drug coverage were the most common provisions identified.

Another aspect of OPEB provisions is the provision and level of coverage for retiree spouses. **Figure 6** on page 6 provides a frequency distribution of the level of spousal coverage for members of a local government’s medical insurance plan(s). Almost all of the 88 local governments that disclosed provisions for spouses offer this coverage to all members. Even though there is low variation in this regard, the cost requirements for spouses can also differ across plans and units of government. “Additional costs” in the figure indicates that the coverage for the spouse requires additional cost sharing above the benefit level for retirees. For example, a plan may offer a spouse the same coverage as for the retiree; however, instead of 50 percent premium sharing for the retiree, it may require the spouse to cover 100 percent of his or her premiums. The figure indicates that most plans that offer spouse coverage impose additional costs for some or all spouses.

Actuarial Assumptions and Methods

The primary goals of performing an actuarial valuation are to calculate the **unfunded actuarial accrued liability (UAAL)** and the **annual required contribution (ARC)**. The UAAL is the difference between the **actuarial accrued liability (AAL)** and the **valuation assets**. While calculated differently depending on the cost method, the AAL generally represents that present value of projected benefits accrued as of the valuation date. The valuation assets represent the present value of cash, investments and other property belonging to an OPEB plan.



The ARC is the sum of the **normal cost** and the **amortization** of the unfunded liability. The normal cost is the portion of the present value of benefits attributed to the

current year of service. The amortization of the unfunded liability is a catch-up payment to fund OPEB accrued during previous years of service for which funding had not been set aside. Although there are several different factors apart from the benefit plan design that influence the calculation of the UAAL and the ARC, this paper will focus on just a few of these assumptions and methods.



Actuarial Cost Method

One key factor is the actuarial cost method that was employed. An actuarial cost method is a procedure for allocating the present value of expected lifetime benefits to each period between an individual’s plan entry and retirement. Six different cost methods are permitted under GASB No. 45; however, this paper will only focus on the two methods that local units of government in Michigan have reported using. Each method results in a different balance between current year and future year costs.

The most common method used in the public sector is the entry age (also called entry age normal) method.³ Under this cost method, the projected benefits of each member included in the actuarial valuation are allocated on a level basis over the earnings or service of the member between entry age and assumed exit age. This method “front loads” the costs by spreading them over the member’s entire career and avoids a spike in contributions as the member nears retirement.

Another method is the projected unit credit method, which is more common in the private sector. Under this cost method, the projected benefits of each individual included in the actuarial valuation are allocated such that contributions are made as they accrue. This method “back loads” the costs since contributions will typically increase as the member nears retirement.

³ See Munnell, Haverstick, Sass, and Aubry (2008) and Newton and Randall (2013) for additional detail regarding the actuarial cost methods. While these sources specifically relate to pensions, many concepts generally apply to OPEB as well since GASB No. 45 uses an approach similar to that outlined in GASB Statement No. 27, “Accounting for Pensions by State and Local Governmental Employers.”

As shown in **Figure 7**, the units of government that reported the actuarial cost method reflect the general trend of adopting the entry age cost method. The choice of cost method was often correlated to the actuary that performed the valuation; typically, actuaries had a tendency to use only one type of cost method.

Figure 8 indicates the relationships between the choice of the cost method and the funded ratio. The funded ratio under the actuarial cost method is greater than that under the projected unit credit method. This is to be expected given that the entry age method “front loads” the benefit costs, leading to a more aggressive funding policy.⁴

One of the most influential actuarial assumption is the discount rate, which is used to calculate the present value of the projected benefits after accounting for other economic and demographic assumptions. With all other variables held constant, a lower discount rate will result in a lower AAL, and thus, a lower UAAL.

The guidance in GASB No. 45 recommends that the discount rate “be based on the expected long-term rate of return on the assets expected to be available to pay or provide OPEB when due” (Governmental Accounting Standards Board, 2004, p. 97). The accounting standard provides three categories of assets: (1) plan assets, which applies to funded plans to which an employer contributes the annual required contribution (ARC) on a regular basis, (2) employer assets, which applies to unfunded plans or those funded under pay-as-you-go, and (3) a proportionate

⁴ Munnell, Haverstick, and Aubry (2008) also share this expectation in their study on the funding status for state and local pension plans. The results from their regression analysis support this hypothesis.

Actuarial Cost Method (based on 102 units)

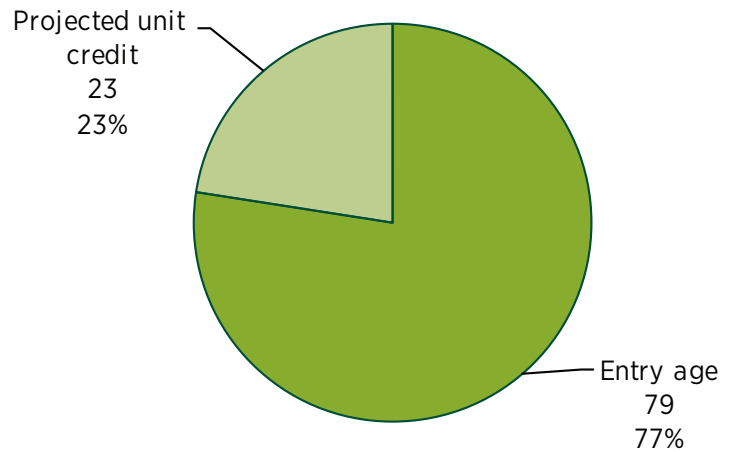
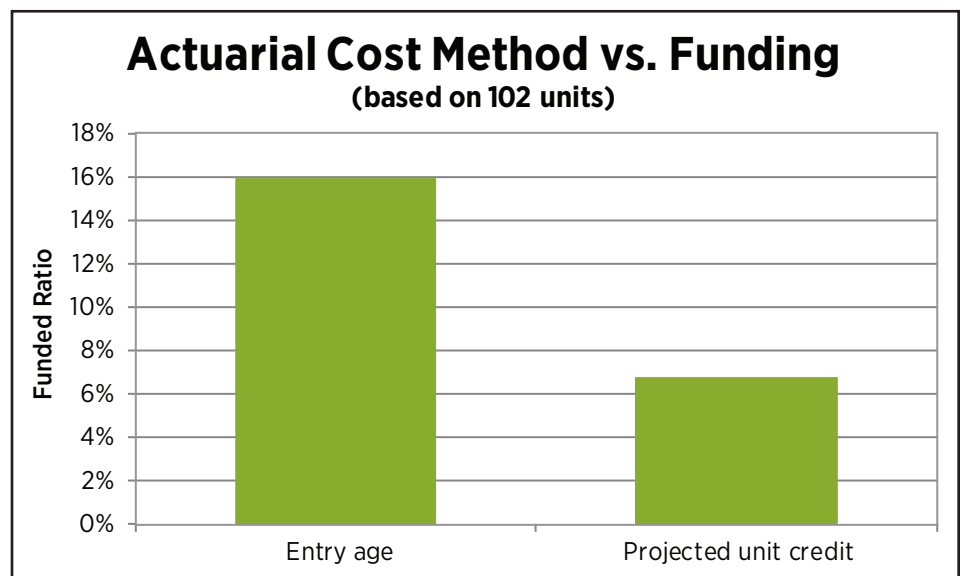


Figure 7. Actuarial Cost Method.

blend of plan and employer assets, which applies to funded plans to which an employer does not contribute the ARC on a regular basis. The statement does not provide any explicit guidance for calculating the blended rate, but suggests to use either the **funded ratio** or the percentage of the ARC that a unit contributes to its plan as a basis. The funded ratio is the ratio of assets to the AAL.



Figure 8. Actuarial Cost Method vs. Funding.



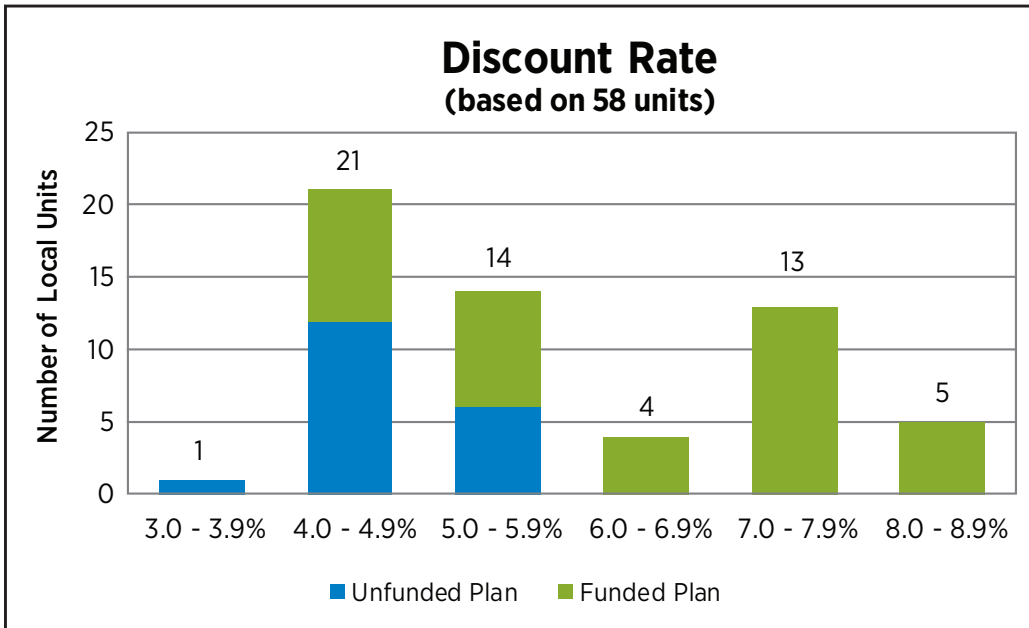


Figure 9. Discount Rate.

Discount Rate

Since the return on investments for a pre-funded plan are expected to be higher than that of an employer’s general fund investments, which are typically the assets used to fund benefits under pay-as-you-go, this provides an incentive for local governments to start pre-funding. **Figure 9** indicates that there is considerable variation in the discount rates used in the actuarial valuations. It also supports the expectation that unfunded plans use lower discount rates than funded plans.

Of the 58 valuations that disclosed the discount rate, 43 are for units that had started prefunding. **Figure 10**

provides another perspective on the relationship between the funding policy and the discount rate among these pre-funded units. For each recent valuation, the ARC and the actual contribution were collected from the first audit report that referenced that valuation. The percentage of the ARC that was funded was a proxy for the funding policy. The chart indicates that there is a slight correlation between the size of the selected discount rate and more aggressive funding policies.⁵

⁵ The data exhibit a Pearson’s correlation coefficient of 0.43, and a student’s t-test indicates that the correlation is statistically different from zero at the 0.01 level.

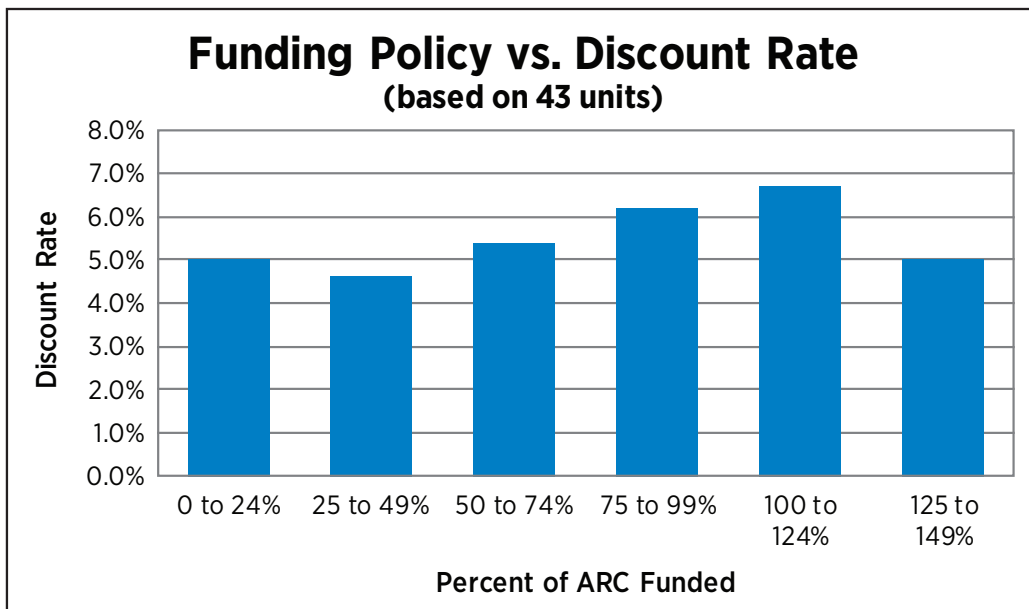
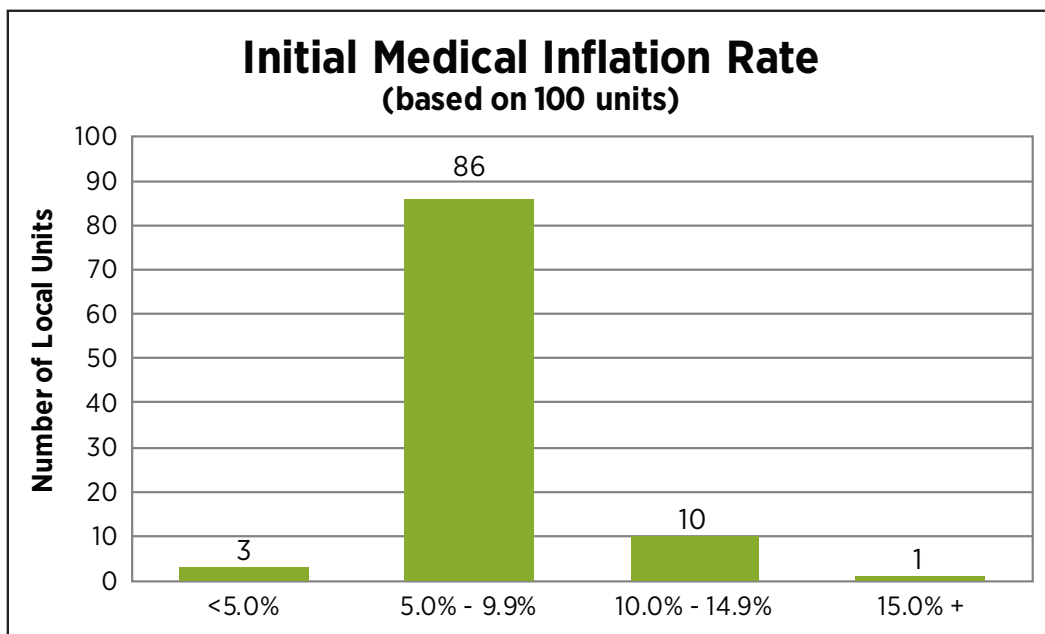


Figure 10. Funding Policy vs. Discount Rate.

Figure 11. Initial Medical Inflation Rate.



Medical Inflation Rate

Another key assumption that actuaries use to estimate the liability is their projections of future medical care costs. This assumption usually is represented in a schedule of annual inflation rates. They often anticipate higher initial medical inflation rates during the first year after the date of the valuation, which gradually levels off at around five to 10 years later. **Figure 11** exhibits a frequency distribution of the initial medical inflation rate assumption used in the sample. As shown, most actuaries assume a rate between 5.0 and 9.9 percent.

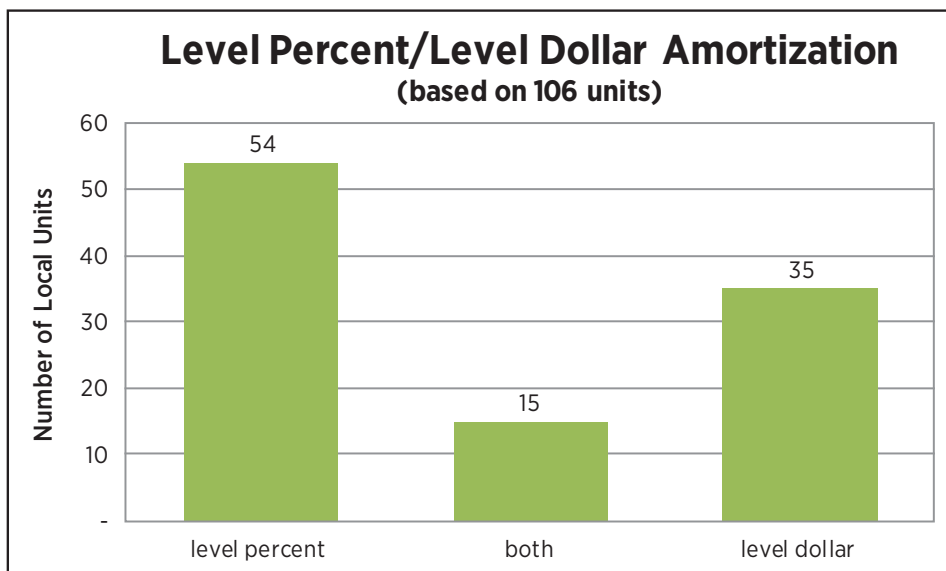
Under GASB No. 45, the UAAL is amortized by two methods: the level percentage of payroll or level dollar. The level percentage of payroll method calculates the amortization payments so that they are a constant percentage of the projected payroll of active plan members. The nominal dollar amount of the payments should increase over time due to inflation, though the payments should remain constant in terms of inflation-adjusted dollars. The level dollar method divides the amortization payment into equal nominal dollar amounts to be paid over a given number of years, similar to a mortgage payment on a house or building. In contrast to the level percent method, payments should decrease as a percentage of payroll

over time and in terms of inflation-adjusted dollars, both due to inflation.

UAAL Amortization

Figure 12 shows a frequency distribution of the usage of level percent, level dollar or both methods. The usage of both methods for the same unit of government is possible if one method is used to amortize the UAAL for one plan and the other method is used to amortize the UAAL for another plan. This figure indicates that the level percent method is more common than the level dollar method.

Figure 12. Level Percent/Level Dollar Amortization.



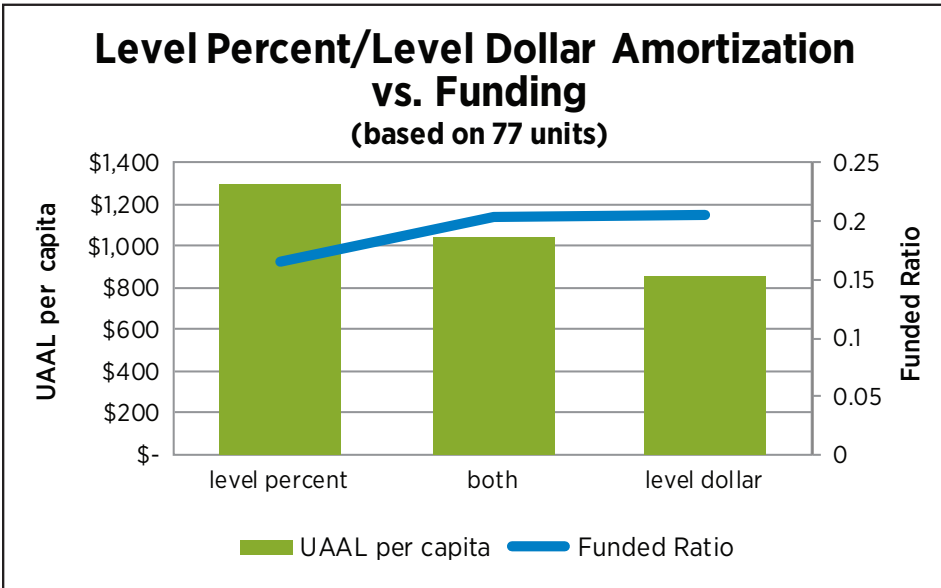


Figure 13. Level Percent/Level Dollar Amortization vs. Funding.

Another implication of using the level dollar amortization method is that the local government tends to fund its liability more quickly if it fully contributes the value of its ARC. Of the 106 valuations that provided information on the amortization method, 77 valuations were for units of government that had started pre-funding. **Figure 13** compares these local governments in terms of the amortization method and the UAAL per capita and funded ratio. Although this chart does not control for the prior history of amortization method selection, it does indicate that level dollar method is correlated with lower unfunded liabilities and higher funding levels.

The UAAL can also be amortized on an open or closed basis. GASB No. 45 states that the maximum amortization

period is 30 years; however, it can be less than that and the amortization period does not have to be constant across valuations for the same unit of government. An open amortization indicates that the amortization period begins again during each valuation. For example, if a valuation performed in 2010 amortized the UAAL over 30 years, a valuation in 2011 would also amortize the UAAL over 30 years under an open basis. In contrast, a closed amortization indicates that the amortization period declines as each year passes. Referring to the previous example, a valuation in 2011 would amortize the UAAL over 29 years under a closed basis. The choice of amortization often (but not always) coincides with the plan status for new hires. The UAAL for plans that are open to new hires

are often amortized on an open basis, while those that are closed to new hires are often amortized on a closed basis.

Only 56 valuations explicitly indicate whether the UAAL was amortized on an open or closed basis. Both amortization methods may have been used if the unit had multiple plans. Most units that had disclosed this information amortized the UAAL on a closed basis. (See **Figure 14**.)

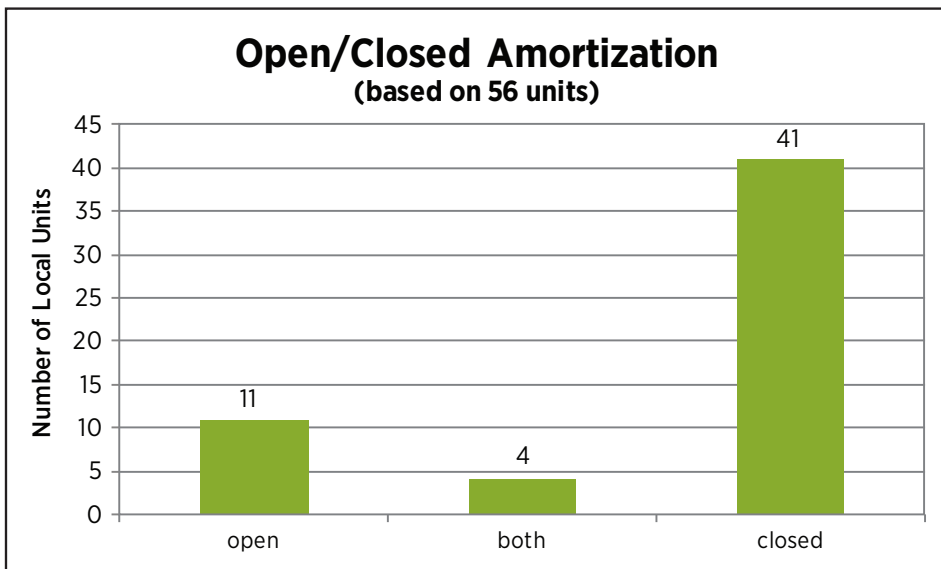
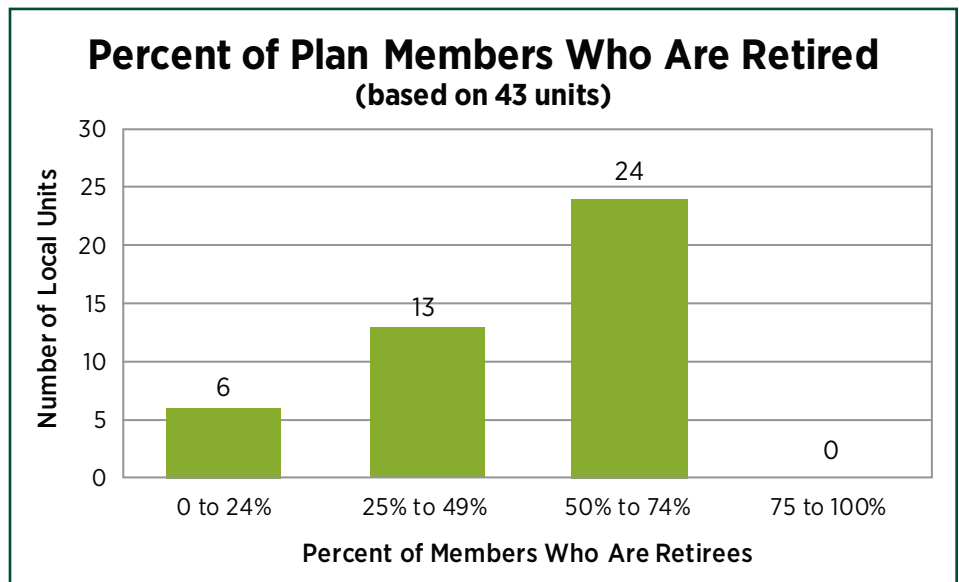


Figure 14. Open/Closed Amortization.

Figure 15. Percent of Plan Members Who Are Retired.



Plan Membership and Composition

Another benefit of consulting the actuarial reports was the level of detail regarding plan membership and composition. Potential classification of plan members included: 1) active employees, 2) deferred retirees who are not yet receiving benefits, 3) retirees currently receiving benefits, and 4) beneficiaries (spouses and dependents) currently receiving benefits. However, the type of information was not reported consistently across all valuations. For example, 52 valuations reported only retirees, 29 valuations reported the sum of retirees and beneficiaries, and 24 valuations reported retirees and beneficiaries separately. Three valuations did not disclose retiree information. Also, only 47 valuations explicitly disclosed the number of deferred retirees in the plan, while 61 valuations did not explicitly mention this figure.

Active Members vs. Retirees

Figure 15 displays a frequency distribution of plan composition in terms of the percentage of plan members who are retired, which includes both deferred members and retirees who are currently receiving benefits. These findings differ substantially from those from the analysis on the audit reports. While a small shift may be reasonable considering that some of these valuations have been updated since FY2011, this suggests that the composition of the sample influences these results.

In our analysis based on the audit reports, we noted that more controversial options may be required to reduce the OPEB UAAL for plans that are more mature (i.e., plans with a higher percentage of retirees). Many local units have closed their plans to new hires or increased cost-sharing requirements for existing employees. However, this has no

effect on the financial obligation to current retirees. Thus, it is expected that plans with a higher composition of retirees would have larger OPEB liabilities per member. Figure 16 supports this expectation since there is a correlation between retiree membership and the OPEB AAL per member.

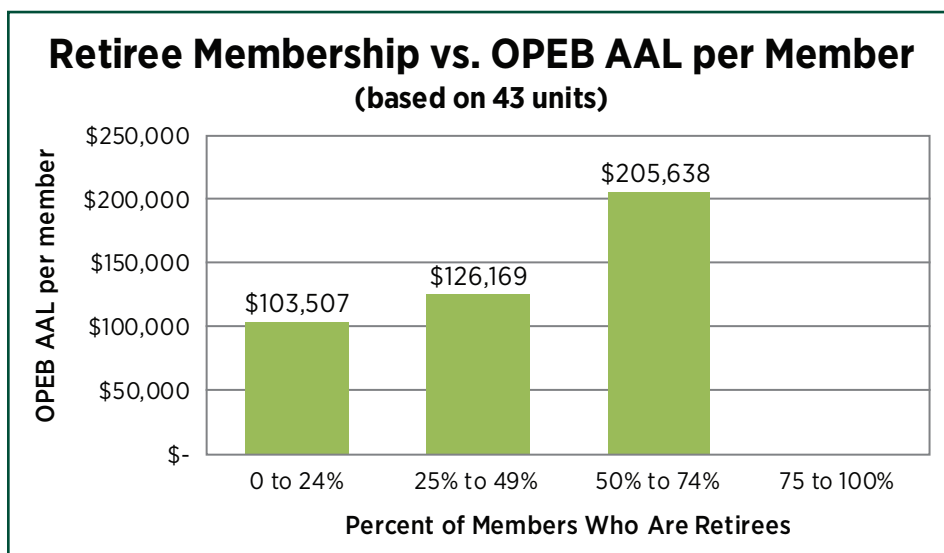


Figure 16. Retiree Membership vs. OPEB AAL per Member.

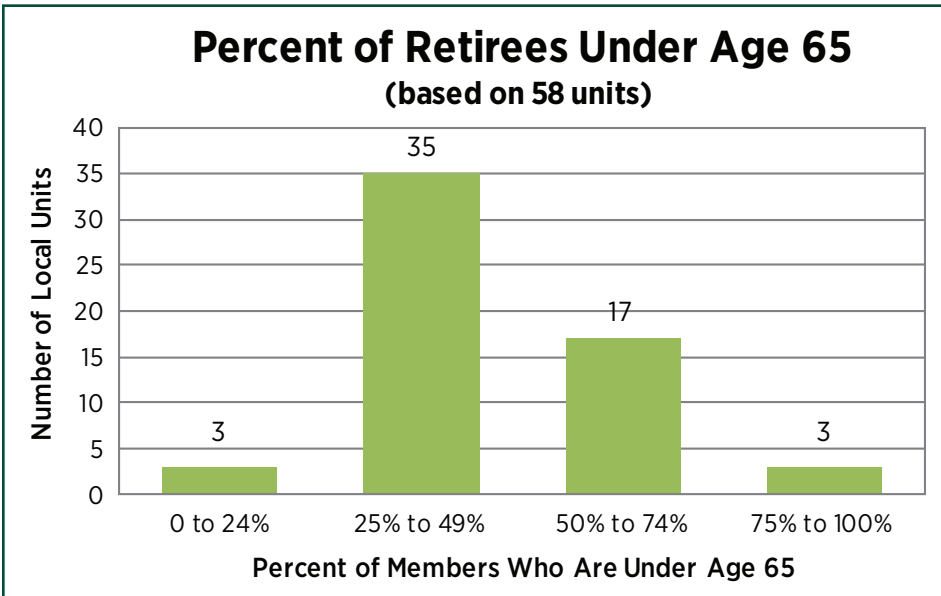


Figure 17. Percent of Retirees Under Age 65.

Medicare-Eligible Retirees

Many actuarial valuations also provided schedules that report the ages of its members; 58 of which provided such information on retirees. **Figure 17** exhibits a frequency distribution of the percentage of retirees under age 65. For the majority of plans, this statistic is between 25 and 49 percent. At least 25 percent of retirees are under age 65 for all but three plans. This indicates that the number of pre-Medicare eligible retirees is not insignificant for most plans. As mentioned earlier, the premiums for individuals who are not enrolled in Medicare are typically higher than those who are enrolled.

General vs. Public Safety Members

The actuarial valuations differ considerably in terms of the disaggregation of the liability and membership into different plans and labor divisions. Some valuations merely reported the total liability and total membership statistics for all plans offered by the unit of government. Others disaggregated it into various labor divisions such as public safety (police and fire departments) and general employees. Some valuations further disaggregated these categories into subcategories such as police command, police officers, water and sewer, administration and clerical, union and non-union, and similar groups.

The designations that include the most valuations out of the sample are that of general and public safety labor divisions. As shown in **Figure 18**, the magnitude of the liability for general employees is comparable to that of public safety employees, based on 70 actuarial valuations. The “Unclear” category notes labor divisions for which it was unclear whether its members included only general or only public safety employees.

Of the 70 units that disaggregated the liability into the different labor divisions and plans, 22 provided data on each plan’s membership. Again, membership is the sum of active employees, deferred retirees (if applicable) and retirees currently receiving benefits. Similar to the first sample of 70 actuarial valuations, this sample indicates that the liability for general employees and public safety employees are roughly the same. However, the membership of general plans is slightly higher than that of public safety plans with 7,525 members compared to 5,469 members.

Consequently, the OPEB liability per member for public safety plans is considerably larger than that of general plans. Based on the data presented in **Figure 19** on page 14, the average OPEB AAL per member for general employees is \$155,089 compared to \$211,117 per member

OPEB AAL by Labor Type (based on 70 units)

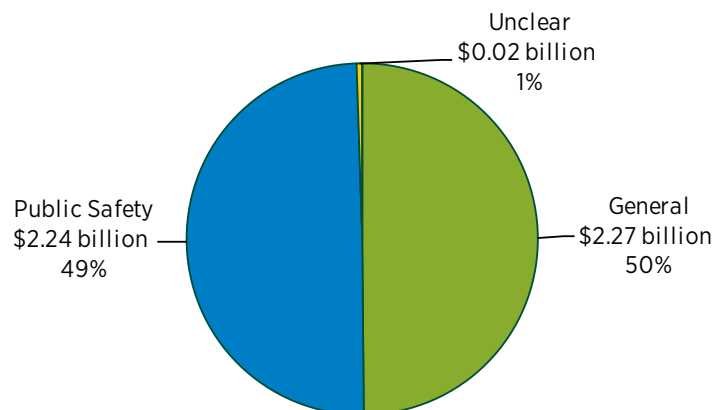


Figure 18. OPEB AAL by Labor Type.

OPEB AAL & Membership by Labor Type (based on 22 units)

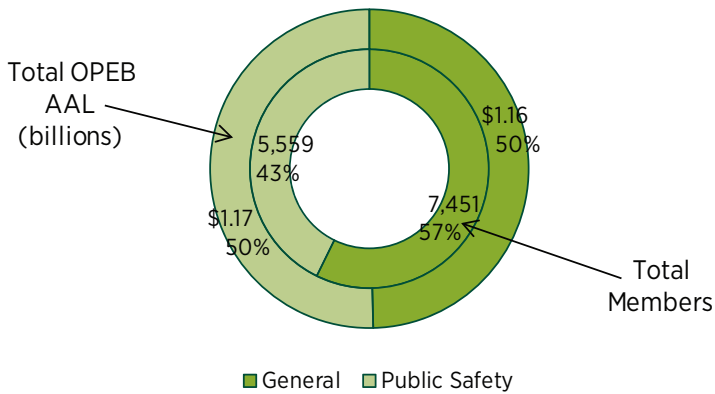


Figure 19. OPEB AAL and Membership by Labor Type.

for public safety employees. The complexity and variety of eligibility requirements and benefit provisions do not facilitate an analysis that is within the scope of this paper. However, these differences possibly can be attributed to substantial variations in benefit plan designs between general and public safety employees.

Data Inconsistencies Between Audits and Actuarial Valuations

We also compared the information disclosed in the FY2011 audit reports with the information in the actuarial valuations to confirm that the disclosures were consistent. Ninety-one of the 161 valuations that we obtained were referenced in the FY2011 audit reports. The variables of interest were the actuarial method used, the OPEB AAL, the OPEB assets, the discount rate, the expected rate of return on investments, the initial and ultimate medical cost trend rates, level dollar/level percent amortization method and open/closed amortization method.

The majority of the units of government were consistent in their reporting based on these nine variables. However, we found inconsistencies in the reporting of 44 units, as

disclosed in **Table 5**. The “Possible Units” row indicates the number of units of government for which both the audit report and the actuarial valuation disclosed the respective variable. The majority of the units (28 out of 44) only contained one inconsistency, and at most, there were four inconsistencies across the nine variables.

For the OPEB AAL, OPEB assets, rate of return, and medical inflation rates, an inconsistency was noted if the reported values differed between the audit reports and actuarial valuations, barring any differences due to rounding. For example, some valuations reported that there were no assets associated with the OPEB plan, while the corresponding audit disclosed otherwise for the same valuation. For the actuarial cost method and UAAL amortization methods, an inconsistency was noted if the type of method differed between the audit reports and valuations. For example, an audit report may have disclosed using the level percent method, while the actuarial valuation disclosed using the level dollar method.

The largest number of discrepancies occurred in reporting whether the UAAL was amortized on a level dollar or level percent basis. However, when considering the sample size for each variable, the most discrepancies were in disclosing whether the UAAL was amortized on an open or closed basis with 28 percent of applicable units of government incurring some sort of reporting inconsistency.

Unless we contact the auditor, the finance department or both for each of these 44 units, we can only speculate on the reasons for these inconsistencies. Possibilities may include clerical errors, misinterpretation of the information disclosed in the actuarial valuations (either on our part or on that of the auditor/finance department), or clarification on the information disclosed in the actuarial valuations. Regarding the last possibility, as an example, the most recent actuarial valuation for one unit had reported “level dollar, closed” as the amortization method, though the audit report disclosed an open amortization. If the amortization period from a prior period was the same as that of the recent valuation, an auditor might interpret that an open amortization method was used and contacted the actuary for confirmation.

Table 5. Inconsistencies between Audit Reports and Actuarial Valuations.

Number of Inconsistencies	Number of Units	Actuarial Method	OPEB AAL	OPEB Assets	Discount Rate	Rate of Return	Initial Medical Trend Rate	Ultimate	Level Dollar/	Open/ Closed Amortization
								Medical Trend Rate	Level Percent Amortization	
One	28	1	5	3	0	2	6	2	7	2
Two	8	1	2	2	0	0	3	2	2	4
Three	6	3	2	1	0	0	2	2	5	3
Four	2	0	0	0	0	1	2	1	2	2
Total Units	44	5	9	6	0	3	13	7	16	11
Possible Units	91	86	91	91	6	77	71	65	83	39
Rate of Inconsistencies	48%	6%	10%	7%	0%	4%	18%	11%	19%	28%

Conclusions

Analyzing the actuarial valuations did help us get a closer look into the issues related to OPEB provisions. This was especially true for understanding the nature of benefit plan designs since the audit reports did not always disclose this level of detail. While most units of government offer OPEB to retirees prior to Medicare eligibility, this often is associated with higher service requirements. Also, while many units do not require cost sharing to any or all of its labor divisions, evidence exists that units of government are scaling back these benefits through closing the plans to new hires and instituting premium sharing or tiered benefit plans.

This analysis has also found correlations that coincide with expected relationships regarding actuarial assumptions and plan characteristics. For example, actuaries do tend to use discount rates that correspond to the government's funding policy. Also, the entry age cost method and level dollar amortization method are both correlated with higher funding levels. Additionally, the data suggest that plans with higher retiree membership incur higher liabilities and that public safety employees incur higher liabilities than general employees. However, further research would need to be done to determine if there are causal relationships between these variables and benefit funding.

The implementation of GASB No. 45 has certainly increased transparency regarding the OPEB provisions in the public sector. Government agencies and public sector research

organizations across the country have begun to quantify these obligations for their respective jurisdictions due to these standards. However, there is still room for growth and improvement regarding the disclosure of this information. The following recommendations would facilitate further research on this topic:

- ▶ **Access to valuations:** The accessibility of these valuations varied widely across local governments. While some were already posted electronically on the respective unit's website, others required Freedom of Information Act (FOIA) requests and charged reproduction fees. The transparency facilitated by GASB No. 45 would be enhanced if these actuarial valuations were made as easily available as the audit reports.
- ▶ **Standardization in valuation reports:** Our key findings indicate that the standardization of the information disclosed in the actuarial valuations could be improved. Much information is common across all reports, such as the disclosure of the AAL, valuation assets and ARC. However, many variables, such as the discount rate, open/closed amortization, composition and ages of plan members, were only reported by a portion of units. The problem of missing data raises issues in terms of our ability to generalize these findings to OPEB provisions across the general population of local governments in Michigan that offer defined benefit OPEB plans.

Appendix A - Units of Government

The table below outlines the list of the units of government included in this analysis:

Name	Type	County
Alpena	City	Alpena
Ann Arbor	City	Washtenaw
Auburn Hills	City	Oakland
Battle Creek	City	Calhoun
Bay City	City	Bay
Belleville	City	Wayne
Benton	Township	Berrien
Berkley	City	Oakland
Birmingham	City	Oakland
Bloomfield	Township	Oakland
Bloomfield Hills	City	Oakland
Brandon	Township	Oakland
Brighton	City	Livingston
Brownstown	Township	Wayne
Burton	City	Genesee
Cadillac	City	Wexford
Canton	Township	Wayne
Center Line	City	Macomb
Chesterfield	Township	Macomb
Clawson	City	Oakland
Cooper	Township	Kalamazoo
Davison	Township	Genesee
Dearborn	City	Wayne
Delhi	Township	Ingham
Delta	Township	Eaton
East Lansing	City	Ingham
Eastpointe	City	Macomb
Farmington	City	Oakland
Farmington Hills	City	Oakland
Fenton	City	Genesee
Fenton	Township	Genesee
Flat Rock	City	Wayne
Flint	Township	Genesee
Frenchtown	Township	Monroe
Grand Blanc	City	Genesee
Grand Blanc	Township	Genesee

Name	Type	County
Grand Haven	City	Ottawa
Grand Rapids	City	Kent
Grandville	City	Kent
Grosse Pointe Farms	City	Wayne
Grosse Pointe Woods	City	Wayne
Harper Woods	City	Wayne
Harrison	Township	Macomb
Hastings	City	Barry
Highland	Township	Oakland
Highland Park	City	Wayne
Holland	City	Ottawa
Howell	City	Livingston
Huron	Township	Wayne
Iron Mountain	City	Dickinson
Jackson	City	Jackson
Kentwood	City	Kent
Lansing	City	Ingham
Lincoln Park	City	Wayne
Livonia	City	Wayne
Ludington	City	Mason
Macomb	Township	Macomb
Madison Heights	City	Oakland
Mason	City	Ingham
Melvindale	City	Wayne
Meridian	Township	Ingham
Midland	City	Midland
Monroe	City	Monroe
Mount Clemens	City	Macomb
Mount Pleasant	City	Isabella
Muskegon	City	Muskegon
Muskegon	Township	Muskegon
Niles	City	Berrien
Northville	City	Wayne
Norton Shores	City	Muskegon
Oak Park	City	Oakland
Oshtemo	Township	Kalamazoo

Name	Type	County
Park	Township	Ottawa
Pittsfield	Township	Washtenaw
Plymouth	City	Wayne
Port Huron	City	Saint Clair
Portage	City	Kalamazoo
Riverview	City	Wayne
Rochester	City	Oakland
Rochester Hills	City	Oakland
Romulus	City	Wayne
Roseville	City	Macomb
Royal Oak	City	Oakland
Saginaw	Township	Saginaw
Saline	City	Washtenaw
Shelby	Township	Macomb
Southfield	City	Oakland
Southgate	City	Wayne
St. Clair Shores	City	Macomb
Sterling Heights	City	Macomb

Name	Type	County
Sturgis	City	Saint Joseph
Summit	Township	Jackson
Taylor	City	Wayne
Tecumseh	City	Lenawee
Traverse City	City	Grand Traverse
Trenton	City	Wayne
Troy	City	Oakland
Van Buren	Township	Wayne
Walker	City	Kent
Warren	City	Macomb
Waterford	Township	Oakland
Wayne	City	Wayne
West Bloomfield	Township	Oakland
Westland	City	Wayne
White Lake	Township	Oakland
Wyandotte	City	Wayne
Ypsilanti	City	Washtenaw
Ypsilanti	Township	Washtenaw

Appendix B – Glossary of Terms

Actuarial accrued liability (AAL) - The portion of the actuarial present value of future plan benefits that is not provided for by the actuarial present value of future normal costs (Governmental Accounting Standards Board, 2004, p. 52).

Amortization payment - That portion of the employer contribution or annual required contribution (ARC) which is designed to pay interest on and to amortize the unfunded actuarial accrued liability (Governmental Accounting Standards Board, 2004, p. 58).

Annual required contribution (ARC) - The normal cost of projected benefits less (or plus) an amortization component of the unfunded actuarial accrued liability (Governmental Accounting Standards Board, 2004, p. 99).

Funded ratio - The actuarial value of assets expressed as a percentage of the actuarial accrued liability (Governmental Accounting Standards Board, 2004, p. 44).

Normal cost - The portion of the present value of total projected benefits assigned to the current year (Governmental Accounting Standards Board, 2004, p. 52).

Unfunded actuarial accrued liability (UAAL) - The excess of the actuarial accrued liability over the actuarial value of assets (Governmental Accounting Standards Board, 2004, p. 53).

Valuation assets - The value of cash, investments and other property belonging to a plan for the purpose of an actuarial valuation (Governmental Accounting Standards Board, 2004, p. 53).

Appendix C – Regions

The regional designations used in this paper were adopted from those used in Michigan State University’s State of the State Survey, which is administered by the Institute for Public Policy & Social Research’s Office for Survey Research (<http://ippsr.msu.edu/soss/>). The Michigan Public Policy Survey conducted by the Center for Local, State, and Urban Policy at the University of Michigan also uses the same region definitions (<http://closup.umich.edu/michigan-public-policy-survey/mpps-regions.php>).

East Central	West Central	Southeast	Upper Peninsula	Northern Lower Peninsula	Southwest
Arenac	Allegan	Genesee	Alger	Alcona	Berrien
Bay	Barry	Lapeer	Baraga	Alpena	Branch
Clare	Ionia	Lenawee	Chippewa	Antrim	Calhoun
Clinton	Kent	Livingston	Delta	Benzie	Cass
Gladwin	Lake	Macomb	Dickinson	Charlevoix	Eaton
Gratiot	Manistee	Monroe	Gogebic	Cheboygan	Hillsdale
Huron	Mason	Oakland	Houghton	Crawford	Ingham
Isabella	Mecosta	St. Clair	Iron	Emmett	Jackson
Midland	Montcalm	Washtenaw	Keweenaw	Grand Traverse	Kalamazoo
Saginaw	Muskegon	Wayne	Luce	Iosco	St. Joseph
Sanilac	Newaygo		Mackinac	Kalkaska	Van Buren
Shiawassee	Oceana		Marquette	Leelanau	
Tuscola	Osceola		Menominee	Missaukee	
	Ottawa		Ontonagon	Montmorency	
			Schoolcraft	Ogemaw	
				Oscoda	
				Otsego	
				Presque Isle	
				Roscommon	
				Wexford	

References

Governmental Accounting Standards Board. (2004). Statement No. 45, *Accounting and financial reporting by employers for postemployment benefits other than pensions* (No. 231-D). Norwalk, CT: Author. Retrieved from http://www.gasb.org/cs/ContentServer?site=GASB&c=Document_C&pagename=GASB%2FDocument_C%2FGASBDocumentPage&cid=1176159988899

Munnell, A. H., Haverstick, K., & Aubry, J.-P. (2008, May). *Why does funding status vary among state and local plans?* (No. 6). Chestnut Hill, MA: Center for Retirement Research at Boston College. Retrieved from <http://www.retirementcoachtexas.com/articles/2.pdf>

Munnell, A. H., Haverstick, K., Sass, S. A., & Aubry, J.-P. (2008, April). *The miracle of funding by state and local pension plans* (No. 5). Chestnut Hill, MA: Center for Retirement Research at Boston College. Retrieved from http://crr.bc.edu/wp-content/uploads/2008/04/slp_5-508.pdf

Newton, J., & Randall, M. (2013, March 22). Gabriel, Roeder, Smith & Company. *Funding policy and actuarial cost methods*. Retrieved from http://www.tmr.org/download/presentations/FundingPolicy_ActuarialCostMethods.pdf

Scorsone, E., & Bateson, N. (2013). *Funding the legacy: The cost of municipal workers’ retirement benefits to Michigan communities*. East Lansing, MI: Michigan State University Extension. Retrieved from http://msue.anr.msu.edu/resources/municipality_legacy_costs