

**SUSTAINABILITY CULTURAL INDICATORS PROGRAM:
FIRST YEAR REPORT**

**MONITORING THE CULTURE OF SUSTAINABILITY
AT THE UNIVERSITY OF MICHIGAN: FALL 2012**



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EXECUTIVE SUMMARY

The Sustainability Cultural Indicators Program (SCIP) is a multi-year project designed to measure and track the *culture of sustainability* on the University of Michigan's (U-M) Ann Arbor campus. It is intended to inform U-M officials and others responsible for day-to-day operations of the University including its academic programs. Furthermore, it is intended to serve as a model demonstrating how behavioral research can be used to address critical environmental issues within universities generally and in other organizational settings. Culture of sustainability is meant to reflect a set of values, behaviors, levels of understanding and commitment, degrees of engagement, and dispositions among a population such as members of a university community.

The findings presented in this report represent Year 1 or baseline measures against which data collected at the U-M in subsequent years can be compared. The findings are largely descriptive in that all survey responses are reported for the three key members of the University community---its students, faculty and staff. Two separate web questionnaires were developed --- one for staff and faculty, and one for students --- with questions built around the U-M Sustainability Goal areas - *Climate Action, Waste Prevention, Healthy Environments, and Community Awareness*. In fall 2012, more than 4000 students, 1000 staff, and 1000 faculty participated in the survey representing a 43.6 percent overall response rate.

Summaries of key findings, response distribution tables for nearly all questions, and index scores for 15 key indicators are provided in first year report. The indicators represent baseline measures against which indicators for subsequent years will be compared. For 2012, the index scores reveal several things.

First, there is considerable room for improvement with regard to the behaviors, levels of awareness, degrees of engagement and expressed commitment to sustainability among members of the University community.

Second, the behaviors of students are far more in tune with the goal of greenhouse gas reduction than the behaviors of staff and faculty. This is largely due to differences in the ways each group travels to and from campus. Students are also likely to know more about transportation options available to them and are more engaged than either staff or faculty in sustainability activities on campus.

Third, compared to students and staff, faculty tend to act in a more sustainable manner with respect to conserving energy, preventing waste, purchasing food , and more generally, engaging in pro-environmental activities outside of the University. Faculty members also express a higher level of commitment to sustainability than others on campus.

Finally, students tend to be less knowledgeable than staff or faculty about protecting the natural environment, preventing waste, and sustainable foods. But they are more aware than faculty about what is happening at the U-M with regard to sustainability. Nonetheless, members of the staff are most aware of the range of the U-M's sustainability initiatives.

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A. INTRODUCTION

This report presents initial findings from surveys of University of Michigan (U-M) students, staff and faculty conducted during the first year (2012) of the Sustainability Cultural Indicators Program (SCIP). SCIP is a multi-year project designed to measure and track the *culture of sustainability* on the U-M's Ann Arbor campus. It is intended to inform U-M officials and others responsible for day-to-day operations of the University including its academic programs. Furthermore, it is intended to serve as a model demonstrating how behavioral research can be used to address critical environmental issues within universities generally and in other organizational settings. Culture of sustainability is meant to reflect a set of values, behaviors, levels of understanding and commitment, degrees of engagement, and dispositions among a population such as members of a university community.

The findings presented in this report represent Year 1 or baseline measures against which data collected at the U-M in subsequent years can be compared. The findings are largely descriptive in that all survey responses are reported for the three key members of the University community---its students, faculty and staff. Demographic, environmental, and other factors that might explain findings have not been fully analyzed and therefore are not covered in this report. The potential for such analyses is great and it is anticipated that much of it will occur in the future.

Organization of the Report

The report is organized in five sections. The next section (B) sets the stage for the material that follows including a review of major University activities leading up to the creation of SCIP. This background material includes a discussion of the year-long campus sustainability assessment conducted in 2010 and 2011. It then outlines the steps taken in carrying out SCIP during its first year. This report is the culmination of that process.

Section C describes the survey design including the sampling plan and discusses salient characteristics of the respondents. For students, these characteristics include selected information about their U-M status such as year in school, where they are from (domestic or international), their housing situation, and their college or school within the U-M. For staff and faculty, information about their job, their housing situation, and their place of employment within the University is presented. Basic demographic information about the respondents is covered in Appendix B.

The fourth section (D) summarizes findings from the fall 2012 surveys. These Year 1 findings draw from detailed tables showing all survey responses for each undergraduate cohort and graduate students as well as for staff and faculty. The complete set of tables is found in Appendix C. The section concludes with a summary of the sustainability indicators characterizing the culture of sustainability at the U-M in 2012.

Finally, Section E offers a glimpse of the work that is expected to take place following the release of this report. Specifically, it outlines plans for the 2013 survey, the continuing analysis of the 2012 data, some of which will be in conjunction with University-wide and building-based environmental indicators, and dissemination efforts aimed at seeing programs similar to the U-M's SCIP replicated at other universities and in organizations and communities. Such programs aimed at changing the culture of sustainability in places and monitoring that change are seen as critical to addressing complex and pressing environmental problems.

B. BACKGROUND

Campus Sustainability Integrated Assessment

In October 2009, U-M President Mary Sue Coleman elevated the University's commitment to sustainability in teaching, research, operations, and engagement by creating the U-M Environmental Sustainability Executive Council.¹ One of the first actions of the Council was endorsing a Campus Sustainability Integrated Assessment (CSIA) to analyze the U-M's sustainability efforts to date, benchmark against other institutions, and chart a course for the future through identifying long term goals for sustainable operations on the U-M Ann Arbor campus, including the Athletic Department and the Health System. The CSIA builds on a long history of sustainability commitments in U-M campus operations, such as implementing cogeneration technology at the Central Power Plant in the 1960s, adopting the EPA Green Lights and Energy Star programs in the 1990s, and more recently establishing LEED (Leadership in Energy and Environmental Design) Silver certification as the standard for new non-clinical construction projects where the construction value exceeds \$10M.

During Phase 1 of the CSIA, seven faculty-led and student-staffed Analysis Teams focused on: *Buildings, Energy, Land & Water, Food, Transportation, Purchasing & Recycling, and Culture*. A unique aspect of the Culture Team was that it placed members within each of the other Analysis Teams to support coordination across teams. While conducting literature reviews, peer benchmarking, and assessing U-M practices, CSIA Analysis Teams also consulted with U-M operations personnel to gain institutional perspectives regarding their areas of study. At the conclusion of Phase 1, the Analysis Teams submitted comprehensive reports and suggested ideas for further study in Phase 2. The Integration Team reviewed the reports and conducted multiple meetings with the Analysis Teams and the Steering Committee to identify areas of intersection across these ideas. This review resulted in a priority list of proposed sustainability ideas that required further analysis during Phase 2.

During Phase 2, the Analysis Teams were charged with conducting more detailed analyses that included costs, benefits, technical guidance, uncertainties, and reasonable implementation timeframes for potential actions. The final CSIA report contains the recommendations developed by the Integration Team, and informed by the Phase 2 Analysis Team reports with additional input from U-M operations staff and the CSIA Steering Committee. The report outlines four high level themes – *Climate Action, Waste Prevention, Healthy Environments, and Community Awareness*. Accompanying the themes are Guiding Principles to direct the U-M's long-range strategy and 2025 Goals that are time-bound and quantifiable.² Table 1 provides an overview of the U-M's 2025 Sustainability Goals.

¹ The Council is comprised the University President, the Provost and Executive Vice President for Student Affairs, the Vice Presidents for Research, Student Affairs, Development, and Global Communications & Strategic Initiatives, the Executive Vice President for Medical Affairs, and the Executive Vice President and Chief Financial Officer.

² More information on the CSIA process, outcomes, and evaluation can be found at: <http://graham.umich.edu/knowledge/ia/campus>. Information on progress towards the 2025 Climate Action, Waste Prevention, and Healthy Environments goals can be found at: <http://www.ocs.umich.edu/goals.html>

Table 1

CSIA Themes, Guiding Principles, and 2025 Goals

THEME	GUIDING PRINCIPLE	2025 GOALS
Climate Action	We will pursue energy efficiency and fiscally-responsible energy sourcing strategies to reduce greenhouse gas emissions toward long-term carbon neutrality.	Reduce greenhouse gas emissions (<i>scopes 1&2</i>) by 25% below 2006 levels. Decrease carbon intensity of passenger trips on U-M transportation options by 30% below 2006 levels.
Waste Prevention	We will pursue purchasing, reuse, recycling, and composting strategies toward long-term waste eradication.	Reduce waste tonnage diverted to disposal facilities by 40% below 2006 levels.
Healthy Environments	We will pursue land and water management, built environment, and product sourcing strategies toward improving the health of ecosystems and communities.	Purchase 20% of U-M food from sustainable sources. Protect Huron River water quality by: <ul style="list-style-type: none">• minimizing runoff from impervious surfaces (<i>outperform uncontrolled surfaces by 30%</i>), &• reducing the volume of land management chemicals used on campus by 40%
Community Awareness	We will pursue stakeholder engagement, education, and evaluation strategies toward a campus-wide ethic of sustainability.	<i>There is no goal recommendation for this theme. However, the report recommends investments in multiple actions to educate our community, track behavior, and report progress over time.</i>

The Sustainability Cultural Indicators Program

The scientific and technical challenges of sustainability on which universities and colleges as well as practitioners have focused the bulk of their efforts represent only part of the necessary intellectual and social transition to a sustainable society. Institutions of higher education play a pivotal role in addressing the more difficult yet powerful part of the sustainability transition. That role is in creating and maintaining a “culture of sustainability” among members of the university community. A culture of sustainability has been defined as “a culture in which individuals are aware of major environmental (and social/economic) challenges, are behaving in sustainable ways, and are committed to a sustainable lifestyle for both the present and future” (Marans et al. 2010). To achieve this ideal state within institutions of higher education, Sharp (2002) calls for a rethinking of organizational action and actors that questions the prevailing assumptions of organizational rationality that stays within the confines of the current systems. Similarly, Senge (2000) stresses the importance of cultivating a “learning organization,” rather than a “knowing organization” since change at higher education institutions is a “complex learning and unlearning process for all concerned” (Scott 2004). Therefore, nothing less than a paradigmatic shift in organizational thinking is needed for colleges and universities to promote cultural transformation, (see also Ehrenfeld 2009 and Ehrenfeld and Hoffman 2013).

This organizational transformation is needed in all sectors of society. Yet institutions of higher education can and should be at the forefront with the collective mission of fostering sustainability through our actions and through cultivating future sustainability leaders. To date, however, most

campus sustainability efforts stop either at “greening” or at the level of institutional commitments to eco-efficiency, climate and waste mitigation, and increasing environmental education. Though calls for institutional and cultural transformation are multiplying at a rapid rate, rarely do institutions address the deeper cultural change necessary to transform into sustainable organizations which empower citizens with a sustainability perspective; instead, focus is often on implementing many individual projects, isolated initiatives, or broad commitments (Sharp 2002, 2009). This is partly attributable to the lack of guidance for institutions attempting to follow this more uncertain and uncomfortable path.

U-M cultural change initiatives stem from the principles outlined under CSIA theme of Community Awareness. They indicate that the U-M will “pursue evaluation strategies toward a campus-wide ethic of sustainability” as articulated in President Coleman’s September 2011 speech announcing the sustainability goals. Specifically, she stated that “we will scientifically measure and report our progress and behavior as a community...ISR (Institute for Social Research) researchers will measure the sustainability attitudes and activities of students, faculty and staff, as well as identify where we can improve.”³ The evaluation strategies involve a groundbreaking program for monitoring the U-M’s progress in moving toward a culture of sustainability. Progress will be determined by tracking a set of cultural indicators over time.

To create these indicators, a small group closely involved with the CSIA met for over a year working on what came to be known as the Sustainability Cultural Indicators Program (SCIP). The group started with examining the recommendations from the Campus Integrated Assessment Culture Team report, reviewed related literature, spoke to key national leaders working on similar efforts, ran focus groups with students and staff (see Schoolman et al. *in submission*) to determine current understandings of sustainability, and analyzed more than thirty existing campus surveys from numerous institutions (including the U-M) about topics such as recycling, transportation, etc.

One of the most useful resources for this work was the North American Association for Environmental Education’s report “Developing a Framework for Assessing Environmental Literacy” (Hollweg et al. 2011). It provided a very useful frame for developing questions under three categories; knowledge, dispositions or attitudes, and behavior. This went beyond many of the existing campus surveys which focus primarily on sustainability literacy or environmental literacy, or which focus exclusively on operational outcomes.

Two separate questionnaires were developed for the U-M --- one for staff and faculty, and one for students. While many of the questions were similar, different time frames and sequences were used in the two versions. For example, the staff and faculty survey asked questions within a time frame of the past year while students were asked to answer questions based on their experience since the start of the fall semester. Also, students were asked several demographic questions at the start of the survey such as whether they live in campus housing or not in order to skip certain questions which did not apply to students living in campus housing while staff and faculty demographic questions were asked at the end of the survey. As a primary objective of the project was to work closely with the goals of the CSIA, modules were developed with questions focusing on transportation, waste prevention, the natural environment, food, climate change, as well as U-M sustainability efforts, and respondent demographics.

³ To read President Coleman’s address and other information on the U-M’s sustainability goals, please visit: <http://sustainability.umich.edu/commitment>.

The instruments were pretested with 30 staff and faculty from the ISR and the College of Engineering, and a diverse group of 46 students from across campus. Following pretests, the questionnaires were revised and presented to key operations staff members for additional input with the objective of writing questions which would be useful for campus efforts. Final versions of the two questionnaires were then programmed for administration as online surveys. The aim was to produce questionnaires containing no more than 200 questions which could be answered in 15 minutes by selected participants.

C. POPULATION AND SAMPLE

Data from the U-M's Registrar's Office indicate that 36,331 full-time students were registered for classes at the Ann Arbor Campus in September, 2012. At the same time, records from U-M's Office of Human Resources show that 5,855 faculty and 34,661 staff were employed half-time or more.⁴

In order to ensure representation from all segments of the University community and allow for subsequent analysis of panel data, the sample design aimed at obtaining relatively large numbers from the entire student body and from the population of staff and faculty. Specifically, a stratified sample was selected by the Registrar's Office so as to yield approximately 1000 respondents from each undergraduate class (or cohort) and 400 graduate student respondents. At the same time, a stratified sample was selected by the University's Office of Human Resources with a target of 750 staff and 750 faculty.⁵

The actual number of respondents and the response rates are shown in Table 2. The table indicates that completed questionnaires were received from somewhat smaller numbers of seniors, moderately higher numbers than expected from graduate students, and considerably higher numbers of staff and faculty respondents.⁶ Favorable response rates were attributable to several factors including a personalized invitation to participate in the survey from President Mary Sue Coleman, a series of reminder emails including one from John Beilein, head coach of the U-M's men's basketball team, and an offer of a possible monetary incentive.⁷

⁴ Most staff and faculty are full-time University employees. For purposes of the survey, it was decided to draw samples of the Ann Arbor campus faculty and staff personnel who were eligible for full fringe benefits, that is, employees who had at least a 50 percent appointment.

⁵ The research plan also includes the subsequent selection of panels of students from each cohort who will be contacted in each of the following years so as to track changes in individuals as well as changes in each student cohort. It is assumed that there will be attrition in the number of students who will remain in their respective panels throughout their remaining time at the U-M. Hence, the large numbers from each cohort is intended to take into account anticipated attrition. In order to reach the target numbers, larger samples of staff, faculty and students were elected from their respective lists of names (e.g. sampling frame). See Appendix A for a discussion of the sample selection process.

⁶ These numbers and response rates will influence sizes for the second year of the program. The numbers also represent the sample of students and the samples of staff and faculty that completed at least 80 percent of their respective questionnaires. Calculation of response rates for students is based on their official Registrar's Office designation. Appendix A describes what is considered a "completed questionnaire" and discusses differences between the official U-M designation and student's self-identification of their status.

⁷ For a discussion of efforts to ensure respectable response rates. See Appendix A.

Table 2

**NUMBER OF RESPONDENTS
AND RESPONSE RATES**

2012	Number of Respondents	Response Rates (%)
Students	4470	40.6
Fresh	1031	42.2
Soph	1011	40.4
Junior	1005	40.2
Senior	955	38.2
Graduate	468	46.8
Staff	1066	54.1
Faculty	1100	48.9
All Campus	6636	43.6

Weighting

In order to ensure that data reported herein represent accurate estimates for the correct proportions of undergraduate and graduate students and for the staff-faculty ratios, sample weights were developed and applied when analyzing the survey data. These weights are used when reporting data covering *all* students and undergraduate students, and when reporting data for faculty and staff separately and together. Weights take into account not only the true proportion of students from each cohort and the staff to faculty ratio, but also gender and the proportion of University staff and faculty employed within the U-M's Health System.⁸

Who are the Student Respondents?

Table 3 presents weighted distributions for several student characteristics. The table indicates that, as in the general student population, graduate students make up more than a third of the student body and a significant proportion of them are international students (28 percent). Most international students (8 in 10) come from China or other Asian countries. Of the U.S. students 6 in 10 are from Michigan; two-thirds of them are from Southeast Michigan (Wayne, Oakland, Macomb, and Washtenaw counties).

Table 3

STUDENT CHARACTERISTICS

(percentage distribution)*

2012	All Students	Undergraduate Students					Graduate Students
		Fresh	Soph	Junior	Senior	All	
<u>Status (self-report)***</u>							
First-year (Freshmen)	18						
Sophomore	13						
Junior	15						
Senior	16						
Graduate	38						
Total	100						
Number of respondents	4014						

⁸ Details covering weighting are presented in Appendix A.

Table 3 (continued)
STUDENT CHARACTERISTICS
 (percentage distribution)*

2012		All Students	Undergraduate Students				Graduate Students
		Fresh	Soph	Junior	Senior	All	
<u>U.S.- International Student?</u>							
U.S.		84	94	94	88	89	91
International		16	6	6	12	11	9
Total		100	100	100	100	100	100
Number of respondents		3997	1075	823	904	744	3546
<u>Permanent Residence of U.S. Students#</u>							
Michigan							
Wayne, Oakland, Macomb Co (incl. Detroit)		28	33	37	37	37	36
Washtenaw Co		10	9	10	12	13	11
Other MI Countries		23	27	28	27	28	28
Great Lakes States (IL,WI,MN,OH,IN,)		10	9	8	6	6	7
Northeast (NY,MA,NJ,MD,PA,DE,NH,VT,CT,ME)		13	12	10	10	9	10
South (TX,OK,TN,VA,NC,SC,FL,GA,AL, MS,LA)		7	4	3	4	3	3
West (CA, OR,WA,AZ,NM,HI,AK)		7	5	3	3	3	4
Elsewhere		2	1	1	1	1	1
Total		100	100	100	100	100	100
Number of respondents		3485	989	750	783	653	3175
<u>Home Country of International Students</u>							
China (incl. Hong Kong)		36	28	32	53	53	45
India		11	8	4	4	3	5
Other Asian countries (excl.China & India)		33	38	40	32	35	35
European countries		9	4	10	6	6	6
Mexico, Latin American, Central American, Caribbean countries		6	9	6	2	2	4
Elsewhere (incl. Middle East countries)		5	13	8	3	1	5
Total		100	100	100	100	100	100
Number of respondents		402	61	50	102	77	230
<u>College/School</u>							
LSA		44	66	61	58	60	61
Engineering		21	23	24	25	23	24
Ross Business		6	**	4	4	3	3
Rackham Graduate		4	0	0	0	0	0
Other colleges/schools (2% each of all students) ^a		11	7	8	9	8	8
Other colleges/schools (1% each of all students) ^b		6	2	2	3	4	3
Law		2	0	0	0	0	0
Public Health		2	0	0	0	0	0
Medicine		2	0	0	0	0	0
Not ascertained		2	2	1	1	2	1
Total		100	100	100	100	100	85
Number of respondents		4018	1077	827	906	755	3565
a Includes Schools of Education, Information, Kinesiology, Music Theater & Dance, Nursing, and Social Work.							
b Includes Schools and Colleges of Architecture & Urban Planning, Art &Design, Dentistry, Natural Resources & Environment, Pharmacy, and Public Policy							
<u>Major (in LSA & Engineering)</u>							
LSA							
Humanities		15	6	13	19	19	14
Natural Sciences		32	22	36	32	32	30
Social Sciences		33	15	28	45	45	33
Other		3	5	3	2	4	3
Undecided		17	52	20	2	0	20
Total		100	100	100	100	100	100
Number of respondents		2201	428	306	352	391	2138

Table 3 (continued)

STUDENT CHARACTERISTICS
(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	
		Fresh	Soph	Junior	Senior		
Engineering							
Electrical & Computer Science	28	21	30	29	26	27	32
Mechanical	15	9	22	15	13	14	17
Aerospace	10	11	7	7	10	9	12
Chemical	9	12	12	10	12	11	4
Industrial & Operations	6	2	5	14	11	8	1
Biomedical	6	5	3	7	8	6	6
Materials Science	5	2	5	3	5	4	10
Other	16	14	14	14	15	14	18
Undecided	5	24	2	1	0	7	0
Total	100	100	100	100	100	100	100
Number of respondents	843	212	182	213	167	774	69

* ***The student sample was selected from the population of students listed for each cohort in U-M's Registrar's Office. The proportion of respondents in each class differs slightly from official university records. For instance, students who said they are juniors may have enough credits to officially classify them as seniors.

Permanent residence is based on the zip code of the student during their last year in high school.

** Less than one half of one percent

* Percentage distributions are based on the weighted number of respondents to each question. The actual number of respondents for each question differs since not all questions were answered by all respondents.

Student respondents represent all schools and colleges of the University with the majority coming from Literature, Science and the Arts (LSA) or Engineering. Graduate student respondents were more equally distributed throughout the entire University than undergraduates. Among the LSA students, two-thirds of the undergraduates were in either the social or natural sciences whereas a fifth noted *undecided* when asked about their major. About half of the graduate students who identified themselves as LSA said their major was in one of the natural sciences. When asked to specify their major, about 3 in 10 Engineering students mentioned programs in the Department of Electrical and Computer Science.

Less than a third of the student respondents lived in a U-M resident hall or Northwood apartments (see Table 4 and Appendix E, Figures E1 and E2⁹). The majority of resident hall students were freshmen and sophomores. Most upper classmen (juniors and seniors) and graduate students said they lived in an off-campus house or apartment. Overall, about 6 in 10 students moved to their current residence prior to the start of the new semester. The table shows that the proportion of upper classmen who remained in their residence for a year or more increases with each subsequent cohort. Whereas 9 percent of the sophomores had lived in their current residence for a year or more, 22 percent of the juniors and 36 percent of the seniors gave this response. A quarter of the graduate students and 1 in 10 seniors were long-term residents having lived in their current residence for more than 2 years.

⁹ Appendix figures show the number and spatial distribution of resident hall respondents in the Central Campus regions and sub-regions, South Campus, the Health Services sub-region, and the North Campus sub-region. Delineation of regions and sub-regions is discussed more fully in Footnote 12.

Table 4

STUDENT RESIDENTIAL CHARACTERISTICS

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students
		Fresh	Soph	Junior	Senior	
Type of Residence						
U-M resident hall	24	86	50	10	6	39
Northwood community apartments	7	10	5	5	2	6
Off-campus house	24	1	16	31	37	21
Off-campus apartment	41	2	23	48	48	31
Parent's house	2	1	2	2	4	2
Other	2	**	4	4	3	2
Total	100	100	100	100	100	100
Number of respondents	4018	1077	827	906	755	3565
Length of Residence						
Less than 3 months	59	95	79	64	51	72
3-11 months	12	4	12	14	13	11
1-2 years	17	0	7	17	25	12
More than 2 years	12	1	2	5	11	5
Total	100	100	100	100	100	100
Number of respondents	4018	1077	827	906	755	3569
Residence Hall						
Bursley-Baits	22	31	5	10	8	22
South Quad	15	12	23	14	20	15
Mary Markley	13	19	**	4	3	13
West Quad	12	12	14	14	6	12
Mosher-Jordan	6	7	4	5	6	6
Couzens	6	5	9	6	3	6
North Quad	5	0	14	21	18	6
Alice Lloyd	5	5	6	5	3	5
Stockwell	5	0	16	6	8	5
Other (Barbour, Cambridge, Cook, Fletcher, Henderson, Newberry)	10	9	9	15	25	10
Total	99	100	100	100	100	100
Number of respondents	1418	897	404	79	36	1416
Place of Residence(locale)***						
Ann Arbor area	92	79	94	95	95	95
Ypsilanti area	2	5	1	1	2	1
Other Washtenaw Co. cities, townships, villages	1	3	1	1	1	1
Other Michigan cities, townships, villages	4	13	4	3	2	3
Elsewhere	1	0	**	**	0	**
Total	100	100	100	100	100	100
Number of respondents	2260	35	364	764	693	1856
Number of Household Occupants[#]						
One	15	7	6	6	8	7
2-3 persons	36	64	29	34	38	35
4-6 persons	26	21	41	42	36	38
More than 6 persons	23	8	24	18	18	20
Total	100	100	100	100	100	100
Mean Number of Occupants	5.4	5.7	11.1	7.2	6.4	7.5
Number of respondents	2275	36	368	768	694	1866
Availability of Car in Household						
Yes	46	12	24	42	56	33
No	54	88	76	58	44	67
Total	100	100	100	100	100	100
Number of respondents	3994	1074	823	903	744	3544

*Students who reported living in a residence hall or in Northwood apartments were not asked to report number of people in current residence.

*** Residential location based on reported zip code. Students who reported living in a residence hall or in Northwood apartments were not asked to report zip codes. Ann Arbor area zip codes include: 48103, 48104, 48105, 48108, & 48109. Ypsilanti area zip codes include: 48197 and 48198.

** Less than one half of one percent

* Percentage distributions are based on the weighted number of respondents to each question. The actual number of respondents for each question differs since not all questions were answered by all respondents.

The third panel in Table 4 shows that the most frequently named residence halls among freshmen were Bursley-Baits on North Campus followed by South Quad and Mary Markley. The newest residence hall, North Quad, was home to upperclassmen. The table also shows that for students who indicated they lived off-campus, most lived in the Ann Arbor area with small percentages commuting to the Ann Arbor campus.¹⁰ Figure 2 on the next page shows the places where students lived in the fall 2012. The places are based on responses to a question about major streets near the place of residence.

Having roommates was common for students who said they lived off-campus. On average, there were over 5 persons per household. For sophomores, many of whom reported living in a fraternity, sorority or co-op (based on open-ended responses), averaged over 11 people at their place of residence.

Finally almost half of the student respondents said there was at least one car in their household. Not surprisingly, graduate students, many of whom lived far from campus were most likely to have a car available to them. Table 4 shows that access to a car increases with each undergraduate cohort.

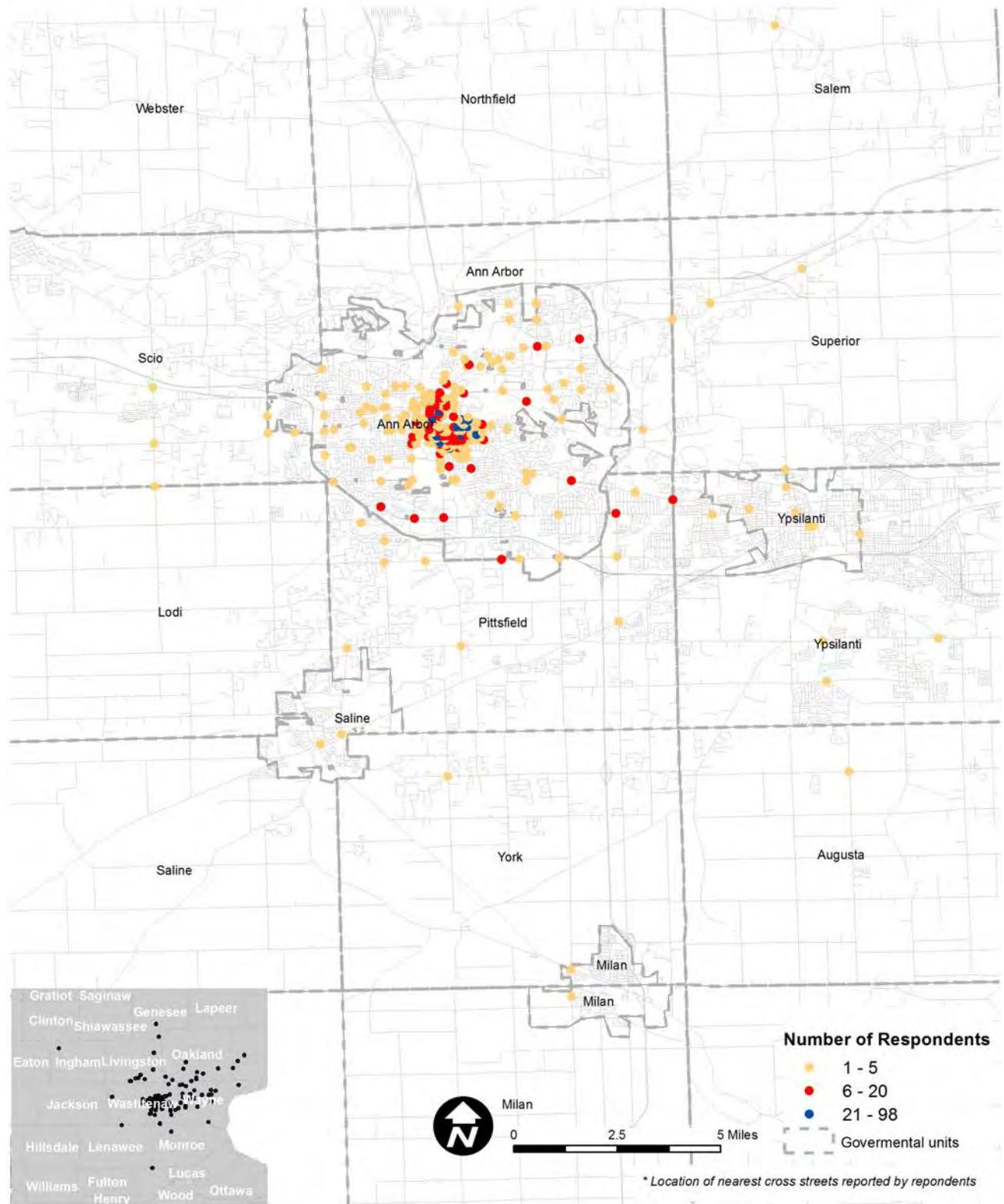
As part of the questionnaire, students were asked where they had attended most of their classes since the beginning of the fall semester. Overall, three-quarters identified Central Campus with most of the remainder saying North Campus.¹¹ Freshmen were least likely to mention North Campus (8 percent)

¹⁰ Students living off-campus were asked, “What is the zip code of your current residence?” Ann Arbor area zip codes include: 48103, 48104, 48105, 48108, and 48109. Ypsilanti area zip codes are 48197 and 48198.

¹¹ Of the students who said their classes were elsewhere, several mentioned the medical campus or noted that they were in an off-campus location including overseas for the semester.

Figure 2

2012 STUDENT RESIDENTIAL LOCATION*



while the proportion of juniors and seniors identifying North Campus for most classes was significantly higher (27 percent), (see Table 5).

Table 5

STUDENT CLASS/STUDY LOCATIONAL CHARACTERISTICS

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students
		Fresh	Soph	Junior	Senior	
<i>Location of Most Classes (self-reports)</i>						
Central Campus	74	91	83	71	70	79
North Campus	19	8	15	27	27	19
Elsewhere	7	1	2	2	3	2
Total	100	100	100	100	100	100
<i>R spends more than half time in non-residential building?</i>						
No	41	70	61	48	45	56
Yes	59	30	39	52	55	44
Total	100	100	100	100	100	100
Number of respondents	3991	1074	823	904	742	3543
<i>Building (non-resid) where R spent most time</i>						
Ross (School of Business)	9	1	9	7	5	5
Duderstadt Center	5	4	4	9	8	7
Chemistry	5	12	10	5	4	7
Shapiro Undergraduate Library	5	18	10	9	5	9
East Hall	5	1	3	5	8	5
North Quad	4	1	1	2	2	2
Angell Hall	4	9	8	7	6	7
Electrical Engineering	4	0	1	4	2	2
School of Public Health	3	**	**	**	**	**
Art and Architecture	3	5	2	2	3	3
Dana (SNRE)	3	1	0	2	2	1
School of Education	3	0	0	2	3	2
Hutchins Hall	3	**	**	**	**	**
Other bldgs (2% each of all students)	14 ^a	32	35	24	24	24 ^b
Other bldgs (1% or less each of all students)	30	16	17	22	28	26
Total	100	100	100	100	100	76
Number of respondents	1888	323	318	469	410	1520
^a Includes Hatcher Grad Library, CC Little, Dennison, GG Brown, Modern Language, Mason, Weill, Moore, Social Work, and Francois-Xavier Bagnoud						
^b Includes Mason, Moore, Modern Language, Dennison, Francois-Xavier, Harlan Hatcher, Michigan Union, 400 N Ingalls, GG Brown, and Bob & Betty Beyster						
^c Includes Social Work, CC Little, Weill Hall, West Hall, Medical Science Research, Dental & W.K. Kellogg						
<i>Location of Building where R spent most time (Campus)</i>						
Central Campus	63	70	71	61	59	64
North Campus	26	20	21	31	34	28
Medical Campus (including Health Sciences)	10	6	6	7	6	6
South Campus	1	2	1	1	1	1
East Campus	0	0	0	0	**	**
Elsewhere	**	2	1	**	**	1
Total	100	100	100	100	100	100
<i>Location of Building where R spent most time (Region)</i>						
Central Campus-West Region	38	40	43	37	35	38
Central Campus-East Region	25	30	28	24	24	26
Health Sciences Region	9	6	6	6	4	5
Medical Campus	1	0	**	1	1	1
North Campus	26	20	21	31	34	28
South Campus	1	2	1	1	2	1
East Campus	0	0	0	0	**	**
Elsewhere	**	2	1	**	**	1
Total	100	100	100	100	100	100

Table 5 (continued)

STUDENT CLASS/STUDY LOCATIONAL CHARACTERISTICS
 (percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students
	Fresh	Soph	Junior	Senior	All	
<i>Location of Building where R spent most time (Sub-Region)</i>						
Central Campus-Southwest	21	5	14	15	15	13
Central Campus-Northwest	17	35	29	22	20	25
Central Campus-Southeast	16	22	18	16	17	18
Central Campus-Northeast	9	7	10	8	7	8
Health Sciences- South	6	6	2	3	3	3
Health Sciences-North	3	**	4	3	1	2
Medical Campus	1	0	**	1	1	1
North Campus-North	19	8	15	26	27	21
North Campus-South	7	12	6	5	7	7
South Campus	1	3	1	1	2	1
East Campus	0	0	0	0	**	**
Elsewhere	**	2	1	**	**	1
Total	100	100	100	100	100	100
Number of respondents	1886	322	318	468	410	1518
<i>Distance between Residence & Campus (sub-region of building where R spends most time)</i>						
Less than .125 mi	1	5	1	1	1	2
.125-.249 mi	9	12	20	11	7	12
.25-.49 mi	24	28	37	31	30	31
.5-.99 mi	26	27	21	25	27	25
1.0-.1.99 mi	21	26	13	19	16	18
2.0-3.99 mi	14	2	6	10	13	8
4.0-5.99 mi	2	0	**	1	2	1
6.0 mi. or more	3	**	2	2	4	3
Total	100	100	100	100	100	100
Mean Distance (Miles)	1.9	0.8	1.1	1.2	1.6	1.2
<i>Distance between Residence & Building (where R spends most time)</i>						
Less than .125 mi	4	11	8	3	3	6
.125-.249 mi	8	12	11	15	8	11
.25-.49 mi	23	27	40	27	28	30
.5-.99 mi	26	22	21	23	26	23
1.0-.1.99 mi	22	27	15	24	20	22
2.0-3.99 mi	12	2	3	5	9	5
4.0-5.99 mi	1	0	**	1	2	1
6.0 mi. or more	4	**	2	2	4	2
Total	100	101	100	100	100	100
Mean Distance (Miles)	1.8	0.7	1.0	1.1	1.5	1.2
Number of respondents	1679	313	295	417	362	1387

** Less than one half of one percent

* Percentage distributions are based on the weighted number of respondents to each item. The actual number of respondents for each differs since not all questions were answered by all respondents. The number of respondents for the building and distance measures reflects non-responses to questions asking where R lives, the building where R spends more than half time, or both.

When asked if they spend more than half their time in a particular campus building other than campus housing, less than half (44 percent) of the undergraduate students and most (84 percent of the graduate students) responded affirmatively. For those who did so, they were then asked to name the building. As seen in Table 5, students spent considerable time in buildings located throughout campus. The third panel in Table 5 shows that the Shapiro Undergraduate Library and the Chemistry building were popular locations for freshmen and sophomores, the Ross Business School building was most often mentioned by graduate students. Ross was also mentioned by relative large numbers of juniors and seniors.

The buildings identified have been grouped together for analytical purposes by campus, regions within the campuses, and sub-regions.¹² These places are shown in Figure 3 on the next page. The groupings also enable U-M officials working in areas related to energy conservation, transportation, recycling, property maintenance, etc. to better understand (and hopefully use) responses of building occupants (students, faculty, and staff) associated with different parts of the Ann Arbor campus.

Groupings of buildings mentioned by students are shown by Campus, Region and Sub-Region in panels 4, 5, and 6 of Table 5. The panels reveal that, for students who identified a building where they spent more than half time, most were either in the southwestern part of the Central Campus (i.e. Ross, Michigan Union, Social Work, Hutchins Hall, etc.), the northern sub-region of North Campus (i.e. Duderstadt Center, College of Engineering buildings, Pierpont Commons, etc.), and the southeastern part of Central Campus (i.e. Chemistry, Natural Science, East Hall, etc.).¹³

The identification of specific University buildings where students spend more than half their time (and the corresponding region and sub-region) together with the student residential location provide a good approximation of the distance traveled between residence and campus.¹⁴ The last two panels in Table 5 show the how far students travel from their home to campus (sub-region and building).

Students who identified a building where they spent more than half of their time while on campus and provided residential information traveled on average 1.8 miles. Freshmen, the majority of whom live in residence halls, traveled nearly three-quarters of a mile while graduate students tend to travel the furthest---about two and a half miles.

Finally, student respondents were nearly equally divided between female and male. Undergraduates were 20 years old on average while the mean age of graduate students was 27, (see Appendix B, Table B1).

Who are the Staff and Faculty Respondents?

Table 6 presents employee characteristics of the staff and faculty who responded to the survey. More than half of the former indicated they were in professional, administrative, or managerial positions and 1 in 5 was either a nurse or a member of the medical staff. Nearly half have been employed by the U-M

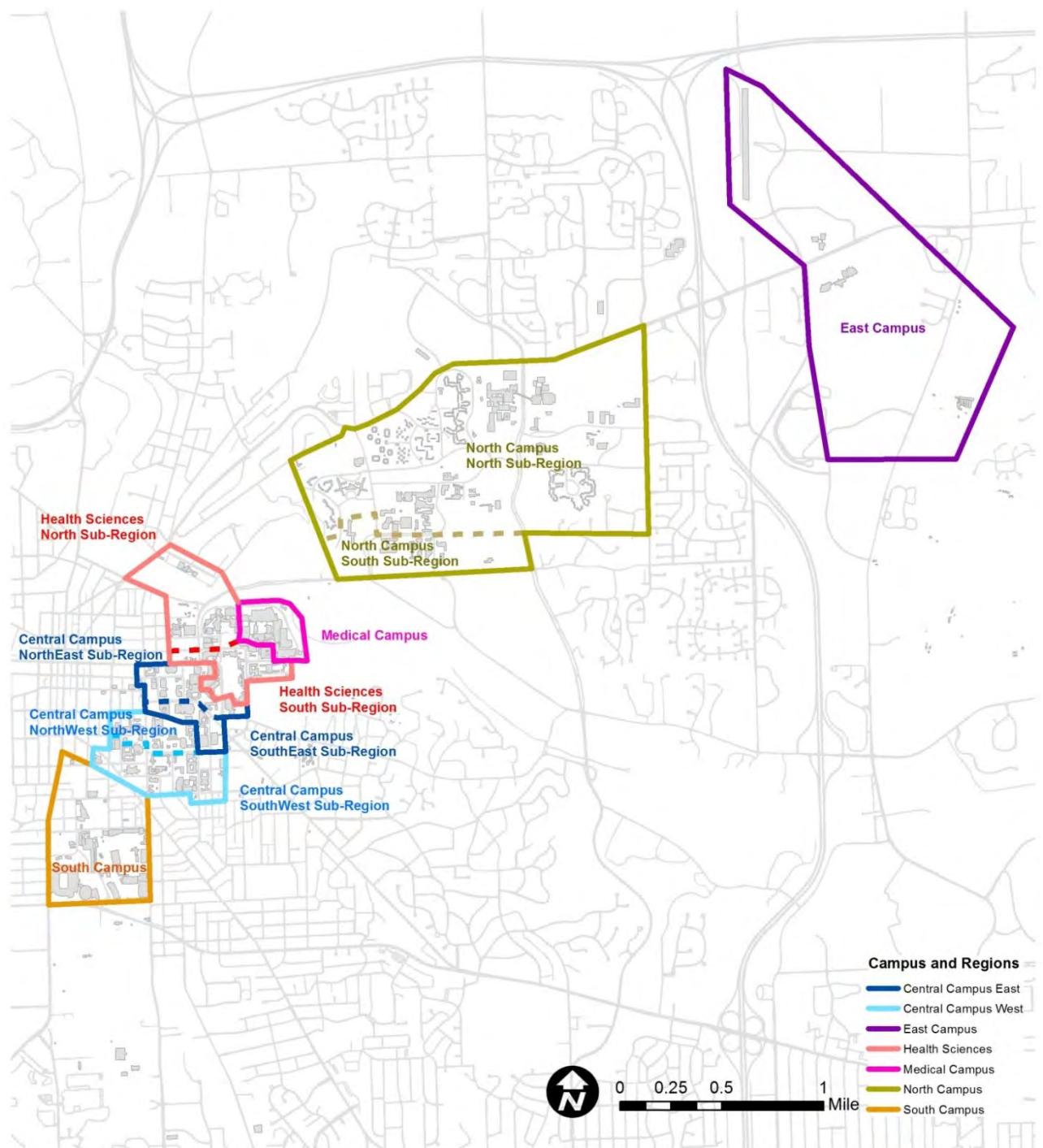
¹² Regions are delineations of the Central Campus and the Medical Campus created as maintenance zones by the U-M's Plant Operations. Sub-regions have been delineated by the SCIP team based on either number of respondents to either the student questionnaire or the faculty questionnaire. Plan Operations had separated medical and other buildings from the U-M's Medical Center and parts of Central Campus to create a Health Sciences Region.

¹³ See Appendix E, Figures E3 and E4 for the numbers and spatial distribution student respondents by building, campus region, and sub-region.

¹⁴ For students living in residence halls, the precise location of their place of residence is known. For students living elsewhere, they were asked the zip code and the nearest street intersection of their place of residence. Because travel routes can vary greatly between any two points depending on mode of travel, straight-line distances between the two points were calculated. Distance measures are only available for students who a) said they spent more than half of their time in a University building and named the building, and b) identified their zip code and major street intersection near home.

Figure 3

UNIVERSITY OF MICHIGAN CAMPUSES AND REGIONS



for more than 10 years whereas somewhat more than a third had been employed by the U-M for 5 years or less.

Table 6

***STAFF/FACULTY
EMPLOYEE CHARACTERISTICS***
(percentage distribution)*

2012		Staff	Faculty
Type of Staff			
Professional		25	
Managerial		10	
Administrative		17	
Research		17	
Medical, Nursing		21	
Service		4	
Other		6	
Total		100	
Type of Faculty			
Teaching - Tenured			25
Teaching - Non-tenured			8
Research - Tenured			10
Research - Non-tenured			20
Clinical instructional -Tenured			4
Clinical instructional - Non-tenured			16
Lecturer			10
Other			7
Total			100
Years at U-M			
Less than a year		4	6
1-2 years		14	8
3-5 years		19	17
6-10 years		17	20
More than 10 years		46	49
Total		100	100

* Percentage distributions are based on the weighted number of respondents to each question. The actual number differs since not all questions were answered by all respondents. The minimum number of respondents for faculty and staff is shown below.

Number of respondents 1072 1080

About half of the faculty respondents were also affiliated the University for a more than 10 years whereas nearly a third had been employed for 5 years or less. One-third identified themselves as teaching faculty although a number also mentioned their research roles. An additional 1 in 5 were clinical instructors and another 10 percent said they were instructors. Thirty percent of the faculty respondents said they were primarily researchers and 4 in 10 were tenured.

As seen in Table 7, faculty members, on average, were twice as likely to live in the Ann Arbor area as staff (81 percent versus 40 percent).¹⁵ In fact, more than a third of the staff said they lived outside of Washtenaw County. The places of residence for staff and faculty are shown in Figures 4 and 5, respectively.

¹⁵ The Ann Arbor area includes the following zip codes: 48103, 48104, 48105, 48108, and 48109. Ypsilanti area zip codes are 48197 and 48198.

Table 7

***STAFF/FACULTY
RESIDENTIAL CHARACTERISTICS***

(percentage distribution)*

2012	Staff	Faculty
<i>Place of Residence (locale)***</i>		
Ann Arbor area	40	81
Ypsilanti area	11	5
Other Washtenaw Co. cities, townships, villages	10	7
Other Michigan cities, townships, villages	38	7
Elsewhere	1	**
Total	100	100
<i>Type of Residence</i>		
Single family house	72	80
2-family house/duplex	4	2
Rowhouse/townhouse	2	3
Apartment building	14	7
Condominium	7	8
Other	1	**
Total	100	100
<i>Owner or Renter?</i>		
Own	70	85
Rent	27	15
Other	3	**
Total	100	100
Number of respondents	1065	1078
<i>Length of Residence:</i>		
Less than a year	13	9
1-2 years	17	12
3-5 years	17	19
6-10 years	17	24
More than 10 years	36	36
Total	100	100
Median Length of Residence (years)	6.9	7.7
<i>Number of Household Occupants</i>		
One	14	13
Two	36	34
Three	21	19
Four	20	25
Five or more	9	9
Total	100	100
Mean Number of Occupants	2.8	2.9
<i>Number of Cars in Household</i>		
None	2	2
One	23	25
Two	47	55
Three	18	14
Four or more	10	4
Total	100	100
Mean Number of Cars in HH	2.1	1.9

***Location of residence is based on the respondents' reported zip code and the nearest major street intersection. Figures cover unweighted data.

** Less than one half of one percent

* Percentage distributions are based on the weighted number of respondents to each question. The actual number of respondents for each differs since not all questions were answered by all respondents. The minimum number of respondents for faculty and staff is shown below.

Number of respondents 1029 1032

Figure 4

2012 STAFF RESIDENTIAL LOCATION*

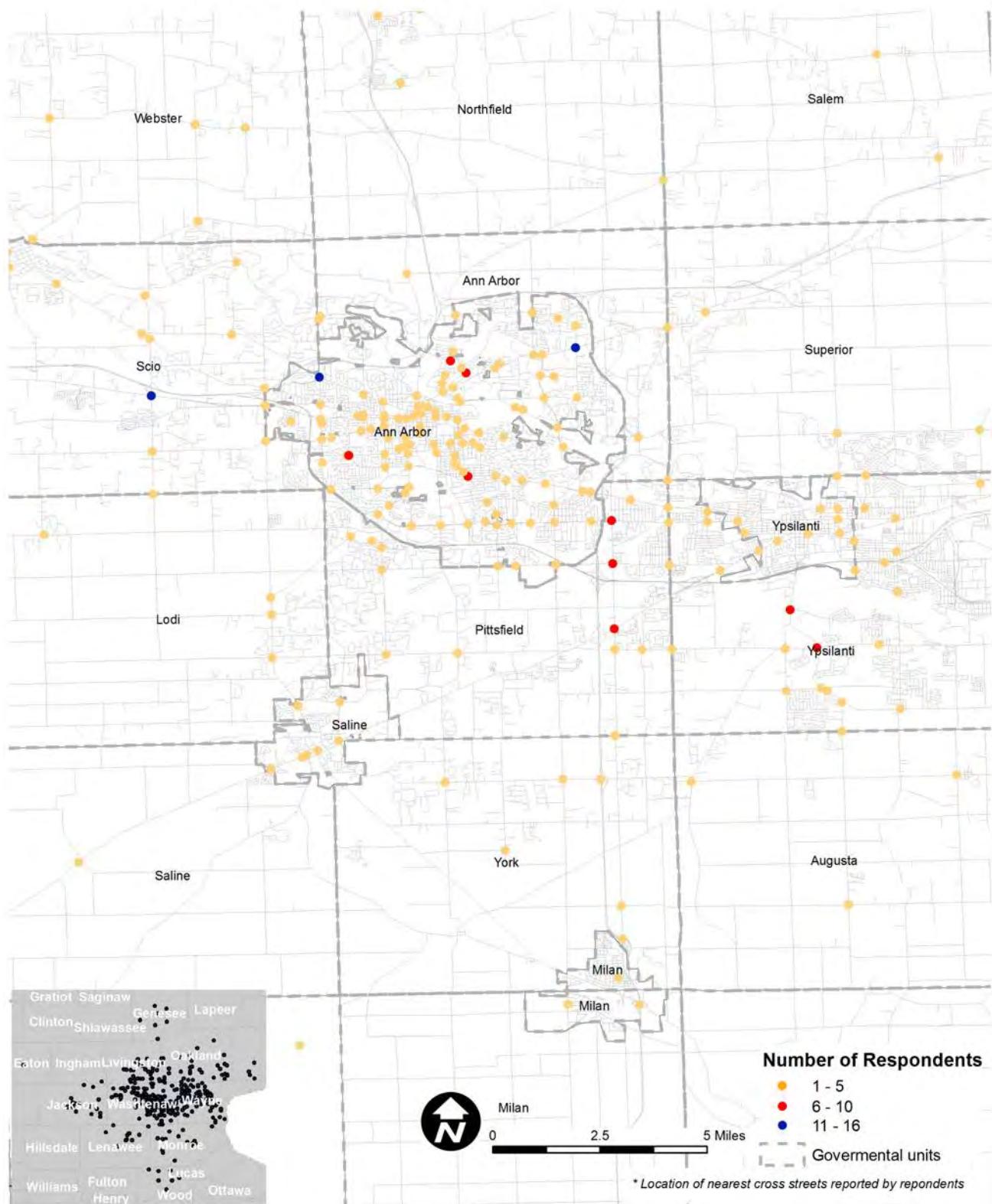


Figure 5

2012 FACULTY RESIDENTIAL LOCATION*

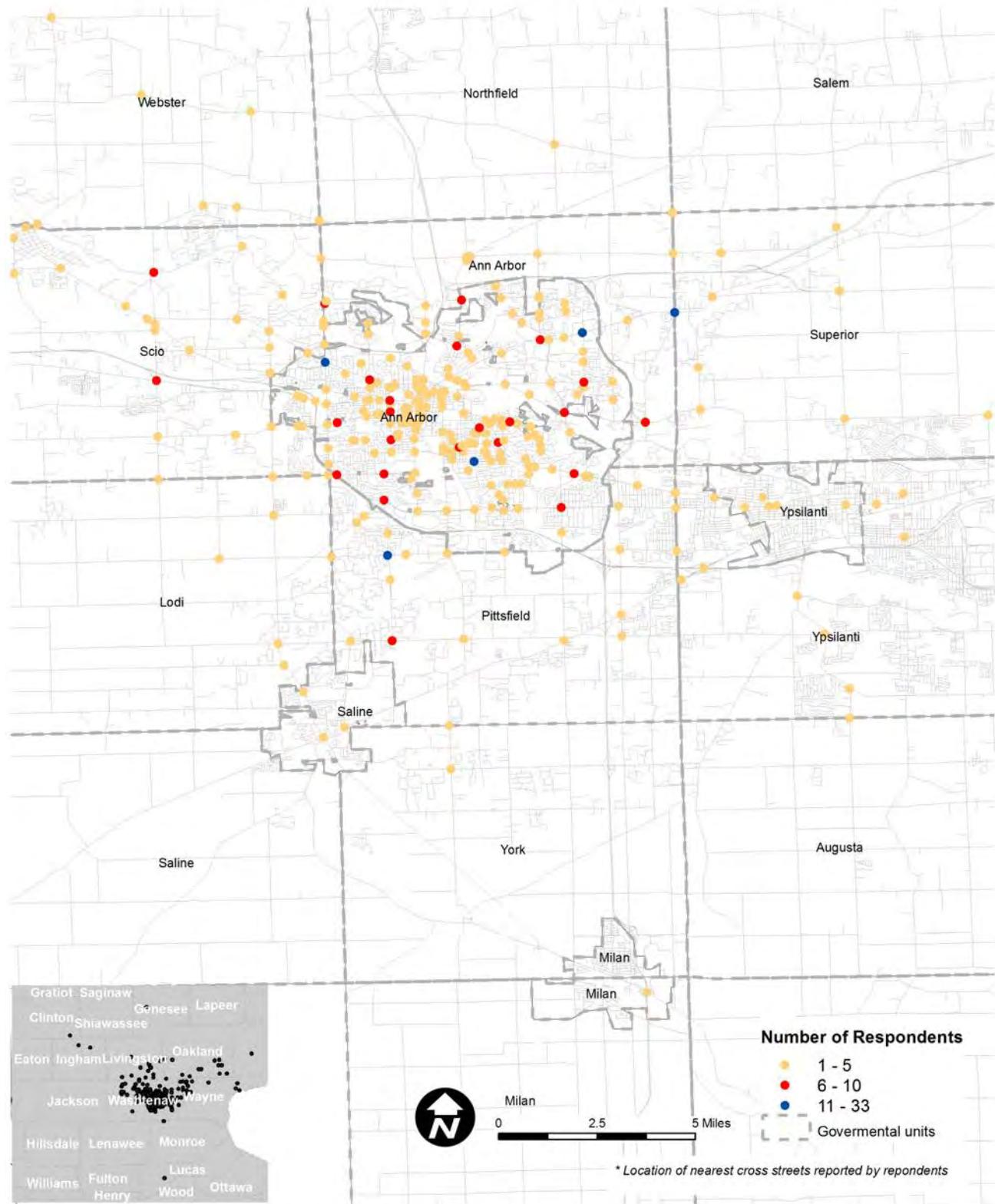


Table 7 also shows that somewhat less than three-quarters of the staff and more than three-quarters of faculty live in a single family house. About one-fifth of the staff live in an apartment building or a condominium whereas 15 percent of the faculty respondents live in these types of dwellings. Irrespective of their type of residence, more faculty than staff own rather than rent their dwellings (85 percent versus 70 percent).

More than a third of the respondents from both groups have lived at their current residence for more than 10 years and each averaged slightly less than 3 persons per household and typically had 2 cars in the household.

Faculty and staff were also asked about the building where they most often worked while on campus. Data covering their place of employment is shown in Table 8 and show buildings and the campus, region, and sub-region where those buildings are located.

Table 8

STAFF/FACULTY
WORK LOCATION CHARACTERISTICS
 (percentage distribution)*

2012	Staff	Faculty
<u>Location of Work (Building)</u>		
University Hospital (medical campus unspecified)	15	9
Mott Children's Hospital	6	6
Medical Science Research (units 1 & 2, unspecif)	4	7
North Campus Research Complex	4	2
Cardiovascular Center	3	1
Domino's Farms	3	1
School of Nursing	2	3
Ross School of Business	2	3
School of Education	2	2
Cancer Center	2	2
Taubman Biomedical Science	2	4
East Hall	1	3
Angell Hall	1	3
Other U-M owned or leased buildings***	55	56
Total	100	100
Number of respondents	1074	1083
<u>Location of Work (Campus)</u>		
Central Campus	20	37
North Campus	11	16
Medical Campus (including Health Sciences)	44	43
South Campus	8	1
East Campus	7	2
Elsewhere	10	1
Total	100	100
Number of respondents	984	1007

Table 8 (continued)

***STAFF/FACULTY
WORK LOCATION CHARACTERISTICS***
(percentage distribution)*

2012	Staff	Faculty
<i>Location of Work (Region)</i>		
Central Campus-East	6	15
Central Campus-West	13	22
Health Sciences	11	21
Medical Campus	33	22
North Campus	12	16
South Campus	8	1
East Campus	7	2
Elsewhere	10	1
Total	100	100
Number of respondents	984	1007
<i>Location of Work (Sub-Region)</i>		
Central Campus-Northeast	3	7
Central Campus-Southeast	3	8
Central Campus-Northwest	7	13
Central Campus-Southwest	7	10
Health Sciences- South	5	8
Health Sciences-North	6	13
Medical Campus	33	22
North Campus-North	10	11
North Campus-South	1	5
South Campus	8	**
East Campus	7	2
Elsewhere	10	1
Total	100	100
Number of respondents	984	1007
<i>Distance between Residence & Campus (location of work: Sub-Region)</i>		
Less than 1 mi	8	12
1.0-1.99 mi	11	24
2.0-3.99 mi	20	37
4.0-5.99 mi	8	11
6.0-9.99 mi	14	7
10-14.99 mi	12	3
15-19.99 mi	10	3
20 mi. or more	17	3
Total	100	100
Mean Distance (miles)	10.5	4.2
Number of respondents	656	788

Table 8 (continued)

***STAFF/FACULTY
WORK LOCATION CHARACTERISTICS***
(percentage distribution)*

2012	Staff	Faculty
<i>Distance between Residence & Building (where R works)</i>		
<hr/>		
Less than 1 mi	8	12
1.0-1.99 mi	10	25
2.0-3.99 mi	19	37
4.0-5.99 mi	8	10
6.0-9.99 mi	15	7
10-14.99 mi	12	4
15-19.99 mi	11	3
20 mi. or more	17	2
Total	100	100
Mean Distance (miles)	10.6	4.1
Number of respondents	720	801

* Percentage distributions are based on the weighted number of respondents to each item. The actual number of respondents for each differs since not all questions were answered by all respondents. The number of respondents for the building and distance measures reflects non-responses to questions asking where R lives, the building where R works, or both.

** Less than one half of one percent

*** Includes buildings having 3 percent or less staff and faculty respondents.

The first panel shows that while more respondents worked at the University Hospital than in any other single building on campus, staff and faculty respondents were distributed widely throughout the entire University. This is clearly demonstrated in the second panel where more than a third of faculty respondents and a fifth of the staff worked on Central Campus. Significant numbers of both groups also worked on North Campus whereas fewer respondents worked in the less populated South Campus and East Campus. Finally, 10 percent of the staff worked off-campus in University-owned or leased space near the Central Campus or near Briarwood (i.e. Wolverine Tower).¹⁶

The identification of specific University buildings where staff and faculty worked and its corresponding campus, region and sub-region was used together with their residential location in measuring the distance between residence and campus.¹⁷ The last two panels in Table 8 show the how far the staff and faculty travel from their place of residence to campus (sub-region and building).

The data show that on average, employees who are staff travel two and a half times further than faculty in commuting to work (10.4 miles versus 4.1 miles). Whereas somewhat more than a third of staff

¹⁶ Appendix E, Figures E5 and E6 show the number and spatial distribution of staff/faculty respondents in buildings, campuses, regions, and sub-regions.

¹⁷ Faculty and staff were asked the zip code and the nearest street intersection of their place of residence. Because travel routes can vary greatly between any two points depending on mode of travel, straight-line distances between the two points were calculated. As in the case of students, distance measures are only available for respondents who gave complete locational information. For staff and faculty, that information was a) the name of the University building where they worked, and b) the zip code and major intersection near their place of residence.

members live within 4 miles of campus, three-quarters of the faculty travel this relatively short distance. In contrast, staff respondents are 6 times more likely than faculty to commute more than 15 miles to the University.

Demographically, staff respondents were more likely to be female and younger than male respondents. Faculty respondents on the other hand, were more likely to be male and older than staff. A significant number of staff members were college graduates or had a graduate or professional degree whereas nearly all the faculty had either a graduate or a professional degree (see Appendix B, Table B2).

D. FINDINGS

As noted in Section B of this report, the U-M has defined a set of goals for 2025 under the themes of *Climate Action, Waste Prevention, and Healthy Environments*. In addition, it aims to enhance the culture of sustainability on campus through the theme of *Community Awareness*. That is, the U-M will strive to raise the level of awareness about all aspects of sustainability through various programs aimed at its students, faculty and staff. Accordingly, findings for Year 1 are organized around these four themes and are presented in two ways. First, selected findings from the 2012 survey within each thematic area are presented.¹⁸ Second, summaries of key findings are reported as Sustainability Indicators for the first year of SCIP (2012). These indicators represent baseline measures against which indicators for subsequent years will be compared.

Sustainability Indicators are composite measures derived from two or more survey questions about a topic or concept.¹⁹ By repeatedly measuring and reporting them each year, the U-M can determine how and the extent to which the culture of sustainability on campus is changing. Although indicators reported under the themes of Climate Action, Waste Prevention, Healthy Environments, and Community Awareness are designated as primary and the remaining indicators are noted as secondary, all indicators are viewed as important to defining the culture of sustainability on the U-M campus.

Climate Action

The U-M's sustainability initiative has been driven in large part by concerns about greenhouse gas emissions and its impact on the environment including climate change. According to the University's Plant Operations Department which is responsible for operating and maintaining over 450 campus buildings, more than 722,000 tons of greenhouse gases are being released into the atmosphere annually.²⁰ Indeed, a key Climate Action goal is to reduce greenhouse gas emissions by 25 percent below 2006 levels.

Despite the debate over climate change and global warming and the significant numbers of Americans who are dismissive or doubtful of its existence, there is irrefutable scientific evidence that climate change is occurring and that it is largely attributable to the burning of fossil fuels (Marlon et al. 2013).

¹⁸ Key findings are drawn from the 16 tables in Appendix C. The tables show the percentage distributions to all survey questions (except those shown in Section C of this report [Population and Sample]). Percentage distributions cover all staff, faculty and students as well as differential responses among different student cohorts ranging from freshmen to graduate students. The tables largely follow the organization and question-sequencing within the questionnaires. That is, they address Travel and Transportation, Waste Prevention and Conservation, Natural Environment, Sustainable Foods, Climate Change, Sustainability Engagement, and the U-M's Sustainability Initiatives. Within the first four topics, tables are organized by the sequence of questions covering *awareness, behavior, and other* questions. Other miscellaneous questions addressing behaviors and opinions are covered in the last table.

¹⁹ In a few instances, a sustainability indicator consists of a single question. For a discussion of procedures used to create sustainability indicators and their components, see Appendix D.

²⁰ See <http://opsteams.plantops.umich.edu/>

As a prelude to discussing behaviors related to Climate Action, the views about climate change by members of the University community were examined.

Sentiments about climate change, the level of understanding about it and its causes vary greatly among U-M students, staff and faculty. Overall, about 4 in 5 respondents are convinced that climate change is happening.²¹ When asked about the strength of their belief, about half the students said they were “completely convinced” compared to nearly three-quarters of the faculty. The proportion of staff who were “completely convinced” that climate change is happening is comparable to that of students. Graduate students were more likely than undergraduates to give this response. The number of respondents who answered “don’t know” to the question was small.

As a way of determining how much people know about the issue, the question, “How well could you explain climate change to someone?” was asked. Three-quarters of the faculty and half of the staff said they could explain climate change “very well” or “fairly well”. Two-thirds of the students gave these responses irrespective of their status as an undergraduate or graduate student.

Finally, faculty were much more likely to say that climate change is “caused mostly by human activity” than either staff or students. Somewhat more than half of the faculty gave this response compared to a third of the staff and 39 percent of the student body. The majority of staff and students said that climate change is “caused by both by human activity and natural causes” whereas just 4 in 10 of the faculty gave this response.

While there are significant numbers who express concern about climate change and understand its causes, members of the University community reveal mixed behaviors through their reported activities at home and at work and modes of travel. On the one hand, University employees and students are making major efforts to decrease the amount of greenhouse gases emitted into the atmosphere. On the other hand, they are contributing to emissions through their collective actions. For instance, nearly 4 in 5 faculty and staff said they always “turn off the lights” when leaving their workplace or do so most of the time.²² Yet, just half regularly “turn off their computer” when leaving their work place, half “use power-savings settings on their computers”, and less than one-third “use a motion-sensor power strip”.

Faculty and staff were somewhat more inclined to conserve energy at home. Nine in 10 said they always or mostly “turn off lights” when leaving a room and two-thirds “use power-savings settings” on their home computers. However, just 4 in 10 regularly adjust their home thermostats to conserve energy during the winter or summer.

Most students (90 percent) also turned off lights when leaving rooms at home and 4 in 5 said they regularly or sometimes “use power-saving settings” on their computers. However, just 1 in 4 of the students living in off-campus housing said they made seasonal adjustments to thermostats to save energy during the past year.

²¹ It appears that members of the University community are more convinced that climate change is happening than the U. S. adult population. In a fall, 2012 national survey conducted by Yale University and George Mason University, reports that 70 percent of the sample said they believed global warming is happening. Of this group, 57 percent said they were “extremely sure” or “very sure” that it was happening. This number represents more than a third of the overall sample. Assuming these U.S. respondents are comparable to U-M respondents who were “completely convinced” or “mostly convinced”, we suggest that the U-M population has stronger feelings about climate change and global warming than Americans as a whole. Complete findings from the Yale-George Mason study are reported in Leiserowitz et al. 2012.

²² The data discussed in this section are gleaned from Appendix C, Tables 5 (conservation behavior) and 2 (travel and transportation behavior).

Travel behavior among faculty, staff, and students also contributes significantly to greenhouse gas emissions. About three-quarters of the staff and faculty said they *always* or *mostly* “drive a car” from home to their work place during the past year. In contrast, the numbers of staff-faculty who said they regularly use alternative modes of travel to work during the past year is small---less than 10 percent from each group ride a bus, and fewer than 6 percent mostly car pool or participate in a U-M van pool.

When asked how they *most often* traveled to/from home to their work place, most staff and faculty said they drive (74 percent). Faculty members were more likely than staff to use alternative means of travel to/from work. Faculty walkers/bikers outnumbered the staff (19 percent versus 8 percent) whereas staff members were somewhat more likely than faculty to say they rode a bus (9 percent versus 6 percent).

Not surprisingly, few students said they drove from home to campus. Overall, just 1 in 10 said they always drove or did so most of the time during the past year. Sixteen percent said they *sometimes* drove to campus, the majority being graduate students. When asked how they *most often* travelled to and from campus since the beginning of the fall semester, nearly 6 in 10 either walked or biked to campus, and a quarter took a bus. Yet, 10 percent of the undergraduate and 18 percent of the graduate students said they *most often* drove to campus since the beginning of the fall semester.

The two indicators related to the Climate Action goals ---Conservation Behavior and Travel Behavior --- suggest that there are opportunities for members of the University community to contribute more toward the University’s goal of reducing greenhouse gas emissions by 2025.

Conservation Behavior Index. Four questions were combined to create a summary indicator showing the status of conservation behavior among U-M students, faculty and staff in 2012.²³ That is, for each individual respondent, their responses to each question were added to create a composite score. Questions dealt with the frequency of turning off lights, turning off the computer when not in use, using power-saving settings on the computer, and using a motion sensor power strip. Table 9 shows that on a scale from 0 to 10, the index score for faculty is 6.9, slightly lower for staff, and significantly lower for students, at 6.1. The table also presents the distribution of grouped scores (in quartiles) for each respondent group.

Table 9

***CONSERVATION BEHAVIOR INDICES,
for STUDENTS, STAFF, FACULTY***
(percentage distributions and mean scores)

2012		Students	Staff	Faculty
High ↑ (7.51-10.00) (5.01-7.50) (2.51-5.00)		6 65 26	19 54 20	20 58 19
Low (0-2.50)		3	7	3
Total		100	100	100
Mean Score		6.1	6.6	6.9
Number of respondents (unweighted)		3994	1023	1069

Travel Behavior Index. Although several questions were asked about mode of travel among students, staff, and faculty, it was decided that a single question would be used to summarize the travel behavior

²³ For staff and faculty, the questions asked about their behaviors during the past year while at work while students were asked about their behaviors without reference to whether it occurred on campus or elsewhere.

among students and a similar question to capture the travel behavior of staff and faculty. For students the question was: “Since the start of the fall semester (2012), how do you most often travel to and from campus?” The question asked of staff and faculty was: How do you most often travel to and from your home to your campus work place?” Response categories for both questions were identical. The index reflects the degree to which the mode of travel impacts the environment. Carbon-free travel (walking, biking) was assigned the highest score while “drive a car” received the lowest score.²⁴ Travel by bus, the combination of bus and bike, or motorcycle was given the second highest score while respondents who car pooled, vanpooled or used Rideshare were given the third highest score.

Table 10 shows the mean scores and the proportion of students, staff and faculty representing each quartile on the 0 to 10 scale. Not surprisingly, students, most of whom live on or close to campus, had the highest score (8.2) whereas staff had the lowest score (2.2). Several factors such as the price of fuel, schedule changes in the University and AATA bus systems, and campus pricing and parking policies could alter these scores in subsequent years.

Table 10

***TRAVEL BEHAVIOR INDICES,
for STUDENTS, STAFF, FACULTY***
(percentage distributions and mean scores)

2012	Students	Staff	Faculty
High (7.51-10.00)	57	8	17
(5.01-7.50)	27	9	6
(2.51-5.00)	3	5	2
Low (0-2.50)	13	78	75
Total	100	100	100
Mean Score	7.6	1.6	2.2
Number of respondents (unweighted)	4017	1074	1083

Waste Prevention

While the U-M’s Plant Operations is responsible for programs aimed at reducing and preventing waste, the actions of faculty, staff, and students play a critical role in diverting waste tonnage to disposal facilities. To a large extent, staff and faculty are behaving in an environmentally responsible manner while at work. Similarly, they and U-M students are also making important efforts to reduce waste on the home front.

Among faculty and staff members, 9 in 10 said they *always* “recycle bottles, containers, and paper products” during the past year or did so *most of the time*.²⁵ Three-quarters gave the same response when asked how often they “use a reusable water bottle, coffee cup, or travel mug” and the same proportion said they either *always* or *sometimes* “print double-sided”. Yet, when asked how often they “use U-M Property Disposition services to obtain items such as computers, furniture, and equipment”, only a third said *sometimes or regularly*.²⁶

²⁴ Differentiation was not considered for drivers of electric or hybrid vehicles since the type of vehicle used was not asked in the questionnaires.

²⁵ The findings in this section are drawn from Appendix C, Table C5 , dealing with waste prevention

²⁶ Unless otherwise noted, the use of “regularly” in the text refers the response option, *Always/Most of the time*. Similarly, the use of the term, “always” in the text is meant to connote the *Always/Most of the time response*.

A significant number of staff and faculty said they had reduced waste at home during the past year. Nearly 9 in 10 said they regularly “recycle bottles, containers, and paper products” while 6 in 10 regularly “recycle their electrical waste”. Similarly, three quarters of the faculty said they *sometimes*, *most of the time, or always* “bring reusable bags to the store” whereas two-thirds of the staff responded in this manner. Faculty members were also more likely than staff to *always* or *sometimes* “shop for things with minimal packaging” (77 percent versus 64 percent).

Levels of waste reduction among students are relatively high but lower than those reported by staff and faculty. For instance, 70 percent of the students (compared to nearly 90 percent of faculty-staff) said they regularly “recycle bottles, containers, and paper products” during the past year. And two-thirds of the students (compared to more than 80 percent of the faculty-staff) gave the same response when asked how often they “used a reusable water bottle, coffee cup, or travel mug”. When asked about how often they “use U-M Property Disposition services to obtain items such as computers, furniture, and equipment” during the past year, just 1 in 8 said *sometimes, most of the time, or always*. And when students were asked how often they “bring reusable bags to the store” when shopping during the past year, less than half (47 percent) said *always* or *sometimes* and just 39 percent said they *always* or *sometimes* “shop for things with minimal packaging”.

Waste Reduction Behavior Index. Four questions were combined to create a summary indicator showing the status of waste prevention behavior among U-M students, faculty and staff in 2012.²⁷ That is, for each individual respondent, their responses to each question were added to create a composite score. Questions dealt with the frequency of recycling, the use of reusable cups, etc. the use of U-M Property Disposition, and printing double-sided when sending work to a printer. Table 11 shows that on a 10-point scale, the index score for staff and faculty is slightly over 7 whereas for students, it is 6.6. The table also presents for each group, the proportion of respondents whose scores are high in the top quartile on the index, those with relatively low scores, and the proportion in the middle quartiles.

Table 11

WASTE PREVENTION BEHAVIOR INDICES, for STUDENTS, STAFF, FACULTY

(percentage distributions and mean scores)

2012	Students	Staff	Faculty
High (7.51-10.00)	10	24	30
(5.01-7.50)	73	60	59
(2.51-5.00)	16	14	10
Low (0-2.50)	1	2	1
Total	100	100	100
Mean Score	6.6	7.0	7.3
Number of respondents (unweighted)	4003	1072	1082

Healthy Environments

With respect to achieving the U-M’s goals of protecting water quality in the Huron River and purchasing or obtaining food from sustainable sources, there are few direct actions that students, faculty and staff can take except support appropriate University initiatives. Efforts by students such as encouraging more

²⁷ As in the case of conservation behavior, the waste reduction questions for staff and faculty asked about behaviors during the past year while at work while for students, questions about behaviors within the past year were without reference to place. That is, it may have occurred on campus or elsewhere.

natural landscaping on campus and purchasing locally grown foods are such examples. Nonetheless, how individuals within the University deal with these issues on a daily basis in the home environment reflects in part the culture of sustainability. Accordingly, questions related to protecting the natural environment at home and sustainable food practices were asked of respondents.

Staff, faculty and students were asked a series of questions about lawn care and disposing of hazardous materials during the past year.²⁸ For faculty and staff who had lawns and did respond, about half said they “water their lawns” regularly or sometimes and about 1 in 8 regularly “use lawn fertilizer”. The number who had used “commercial herbicides or pesticides” was smaller; 1 in 20 said they used these substances regularly and another 20 percent said they sometimes used them.

Not surprisingly, students who responded to the series of questions about lawn care had less of an impact on the environment; about one-quarter regularly or sometimes watered the lawn, just 4 percent regularly used lawn fertilizers, and 2 percent said they had used a commercial herbicide or pesticide during the past year.

Three-quarters of the staff and faculty said they had “disposed of hazardous materials by taking the to a designated disposal facility” and for students who responded to this question, a quarter had taken this action.

Respondents were also asked questions about sustainable landscaping practices. For example 4 in 10 staff and faculty said they had “eliminated invasive species” from their yard while 1 in 10 had “installed a rain barrel,” and more than a third had “intentionally planted native species” at home.

With respect to obtaining sustainable foods, questions were asked about household purchases and growing ones’ own fruits and vegetables.²⁹ Among the staff and faculty, 1 in 5 said he/she (or someone in their household) purchased “locally grown or processed food” during the past year. When asked about the purchase of “organic food”, faculty members were twice as likely as staff to say they did so *always or most of the time* (25 percent versus 13 percent). Seventeen percent of the students gave the same response.

When asked to estimate how much of their grocery purchases during the past year were sustainable food, 4 in 10 faculty said *all/most or more than half* whereas about a quarter of both staff and students gave these responses.

The purchase of locally grown foods varied among staff, faculty and students. When asked if they had shopped at a farmers market or food stand during the past year, 4 in 5 staff and faculty members and 3 in 5 students said yes. And half of the staff and faculty said they had grown their own fruits and vegetables in a “home garden” or “community garden” during the past year. A quarter of the students also said they had grown their own fruits and vegetable.

²⁸ Respondents who lived in an apartment or other multi-family housing were given the option of checking “Not applicable” whereas students living in a residence hall or Northwood apartments were not asked behavioral questions about their residential setting.

²⁹ About one-third of student respondents who said they ate most of their meals in campus dining facilities were not asked questions about sustainable food purchases. When asked about the frequency of purchasing different types of food, the remaining students as well as staff and faculty had the option of reporting, “don’t know”. Data reported here exclude these responses. Frequencies for each question including “don’t know” are shown in Appendix C, Table C11.

Two indices were created to measure progress in creating healthier environments. One index deals with the purchase of sustainable foods and the other covers protecting the natural environment including the Huron River.

Sustainable Food Purchases Index. Responses to three questions were combined to create this index. Two dealt with the frequency of buying “locally grown or processed food” and “organic food” during the past year while the third asked respondents to estimate how much of their grocery purchases during the previous year were sustainable foods. As shown in Table 12, faculty had the highest index score (6.3) with students being somewhat lower (5.5) on average than staff (5.7).

Table 12

***SUSTAINABLE FOOD PURCHASING INDICES,
for STUDENTS, STAFF, FACULTY***

(percentage distributions and mean scores)

2012	Students	Staff	Faculty
High (7.51-10.00)	16	15	24
↓	50	55	57
↓	27	26	18
Low (0-2.50)	7	4	1
Total	100	100	100
Mean Score	5.5	5.7	6.3
Number of respondents (unweighted)	2033	1029	1056

Protecting the Natural Environment Index. The index is based on responses to questions dealing with lawn/garden maintenance and therefore covers only respondents with these characteristics at their place of residence. The questions covered the frequency of watering lawns, using fertilizers, and using herbicides or pesticides during the past year. Table 16 shows that students have the highest index scores (8.6) while faculty respondents have the lowest (6.1). Without further analysis, it is unclear whether the relatively high student score reflect a concern for protecting the environment, a laissez faire attitude about property maintenance, time limitations, or indifference about the appearance of one’s property.

Table 13

***PROTECTING the NATURAL ENVIRONMENT INDICES,
for STUDENTS, STAFF, FACULTY***

(percentage distributions and mean scores)

2012	Students	Staff	Faculty
High (7.51-10.00)	78	46	41
↓	11	23	24
↓	8	20	19
Low (0-2.50)	3	11	16
Total	100	100	100
Mean Score	8.6	6.5	6.1
Number of respondents (unweighted)	1063	859	933

Community Awareness

As part of the U-M's guiding principle within the Community Awareness theme, the University will pursue strategies toward creating a campus-wide culture of sustainability. Currently, there are several initiatives underway to engage and inform members of the University community and raise levels of awareness about all aspects of sustainability.³⁰ As a starting point, it was decided to first learn the extent to which people are knowledgeable about sustainability in different domains and more specifically about their understanding of the U-M's sustainability initiatives. Therefore, questions were asked as part of the surveys about levels of awareness related to travel and transportation, waste prevention and conservation, protecting the natural environment, sustainable foods and climate change. Respondents were also asked the degree to which they were aware of specific actions being taken by the U-M in each of these domains.

Sustainable Travel and Transportation. A significant proportion of staff, faculty and students know relatively little about the range of options for traveling to and from campus and around Ann Arbor. When asked about Ann Arbor's Transportation Authority (AATA/"The Ride") a third of the staff-faculty said they know "not much or nothing" and nearly a third more said "a little". Students tend to know more about AATA. About half gave "not much/nothing" or "a little" with the proportion decreasing as their stay at the University increases.

Similarly, staff and faculty are generally uninformed about the U-M bus system; when asked how much they know about it, about two-thirds responded "not much or nothing" or "a little" compared to only 30 percent of the student body.

Few survey respondents knew about the U-M's Zimride (an occasional ride sharing network), Vanpools, and Greenride (a regular carpooling network) and hourly car rentals such as Zipcars. Just 10 percent of the staff and faculty and 16 percent of the student body know "a lot" or "a fair amount" about Zipcars while the proportion knowing about the U-M's alternative transportation offerings is even smaller.

Waste Prevention. Staff, faculty and students varied in the degree to which they know about recycling. About half from each group said they knew "a lot" or "a fair amount" about *recycling glass* while somewhat more than half gave these responses when asked about *recycling plastic*. Each group expressed a greater understanding about *paper recycling*. Seven in 10 faculty members and staff said they know "a lot" or "a fair amount" and 6 in 10 students gave these responses to the question about recycling paper.

All groups knew considerably less about recycling electronic waste and the U-M's Property Disposition services. Whereas a third of the staff-faculty respondents said they know "a lot" or "a fair amount" about *recycling electron waste*, just 17 percent of the students gave these responses. Students too tended to be unaware of the services of Property Disposition. Only 14 percent said they know "a lot" or "a fair amount" about it whereas more than 40 percent of the staff and faculty gave these responses when asked about the U-M's *Property Disposition services*.

Protecting the Natural Environment. Levels of awareness about ways to protect the natural environment differ greatly within each group. For example, somewhat more than 4 in 10 staff and faculty said they know "a lot" or "a fair amount" about *protecting rivers, streams, and lakes including their tributaries, native species, and habitat* with the Huron River given as an example. Six in 10 said they only know "a little" or "not much or nothing". Students knew even less; more than two-thirds said they know "a little" or "not much or nothing". The same proportion of staff and faculty (4 in 10) indicated that they know "a

³⁰ See Marans and Shriberg, 2012 for a discussion of two initiatives aimed at students.

lot” or “a fair amount” about *taking care of residential property in an environmentally-friendly way* and just 3 in 10 students gave these responses.

Staff and faculty respondents were most knowledgeable about *disposing of hazardous waste materials*. Half said they know “a lot” or “a fair amount” whereas the other half said they know “a little” or “not much or nothing”. Students knew even less; those indicating they know “a little” or “nothing” about hazardous waste disposal outnumbered those knowing “something” by 3 to 1.

Finally, respondents from each group were least aware of invasive plant species. About 4 in 5 staff-faculty said they know “a little” or “not much or nothing” about *recognizing invasive plant species* while somewhat higher percentage of the students gave these responses (85 percent).

Sustainable Foods. Sustainable foods was defined as foods that were organic, locally-grown, or were fair-trade foods, food from humanely-treated animals or animals that have not been given hormones or antibiotics, grass-fed beef, and fish from sustainable fisheries. In general, faculty tended to know more about each of these items than staff. Students were likely to know less than both groups. For instance, two-thirds of the faculty said they know “a lot” or “a fair amount” about *locally grown or processed food* compared to 59 percent of the staff and less than half of the students. Similarly, 7 in 10 faculty members know “a lot” or “a fair amount” about *organic foods* compared to less than 6 in 10 from the staff and student respondent groups.

For other types of sustainable foods, there were significant numbers from each respondent group who said they know “not much or nothing”. For faculty, this response ranged from 8 percent to 15 percent. For staff, the range was 13 to 33 percent, and among students, between 20 percent and 35 percent said they know “not much or nothing” about the other types of sustainable food.

Awareness Indices. Separate awareness indicators were developed for Sustainable Travel and Transportation, Waste Prevention, Natural Environment Protection, and Sustainable Foods. For each of these domains, index scores were created for each respondent by summing responses to all items within the domain³¹. For example, if respondents said they know “a lot” about each individual type of sustainable food, they would receive the highest score; if they said “not much or nothing” about each type, the lowest score would be assigned to those respondents. Since levels of awareness for individuals vary among the items within each domain, their index scores are distributed between the highest levels of awareness and the lowest levels. The distribution of these index scores, based on a standardized or common scale, together with the mean values are shown in Tables 14 thought 18 for students, staff, and faculty.

³¹ The Sustainable Travel and Transportation Awareness Index contains 4 items: knowledge of AATA, U-M buses, Biking, and Zipcar rentals. The Waste Prevention Awareness Index consists of 5 items: knowledge about recycling glass, plastic, paper, electronic waste, and the U-M’s Property Disposition facility. Four items dealing with Natural Environment Protection include knowledge about disposing of hazardous waste materials, recognition of invasive plant species, knowing how to take care of residential property in an environmentally-friendly way, and knowing about protecting rivers, etc. The Sustainable Foods Awareness Index contains 7 items: knowledge about locally grown/processed foods, organic foods, fair trade food, food from humanely-treated animals, food from hormone-free and antibiotic-free animals, grass-fed beef and fish from sustainable fisheries.

Table 14

***SUSTAINABLE TRAVEL AWARENESS INDICES ,
for STUDENTS, STAFF, FACULTY***

(percentage distributions and mean scores)

2012		Students	Staff	Faculty
High	(7.51-10.00)	5	3	4
	(5.01-7.50)	25	13	15
	(2.51-5.00)	46	34	36
Low	(0-2.50)	24	50	45
Total		100	100	100
Mean Score		4.4	3.0	3.4
Number of respondents (unweighted)		4016	1069	1081

Table 15

***WASTE PREVENTION AWARENESS INDICES ,
for STUDENTS, STAFF, FACULTY***

(percentage distributions and mean scores)

2012		Students	Staff	Faculty
High	(7.51-10.00)	7	15	18
	(5.01-7.50)	25	34	33
	(2.51-5.00)	41	34	33
Low	(0-2.50)	27	17	16
Total		100	100	100
Mean Score		4.0	5.0	5.1
Number of respondents (unweighted)		4018	1074	1083

Table 16

***AWARENESS OF NATURAL ENVIRONMENT PROTECTION
INDICES, for STUDENTS, STAFF, FACULTY***

(percentage distributions and mean scores)

2012		Students	Staff	Faculty
High	(7.51-10.00)	4	8	10
	(5.01-7.50)	14	22	24
	(2.51-5.00)	31	35	35
Low	(0-2.50)	51	35	31
Total		100	100	100
Mean Score		3.1	4.1	4.3
Number of respondents (unweighted)		4017	1074	1083

Table 17

**SUSTAINABLE FOOD AWARENESS INDICES ,
for STUDENTS, STAFF, FACULTY**

(percentage distributions and mean scores)

2012		Students	Staff	Faculty
High	(7.51-10.00)	12	15	22
	(5.01-7.50)	27	28	35
	(2.51-5.00)	35	37	33
Low	(0-2.50)	26	20	10
Total		100	100	100
Mean Score		4.3	4.7	5.6
Number of respondents (unweighted)		4018	1074	1083

The tables reveal that compared to staff and faculty, students are more aware of sustainable travel options but less aware of efforts to prevent waste and protect the natural environment. With respect to sustainable foods, students know the least (4.3) while faculty members are most knowledgeable (5.6).

U-M Sustainability Initiatives. Respondents were also asked the extent to which they were aware of specific sustainability initiatives or actions taken by the U-M. These included the University's efforts to *conserve energy, reduce greenhouse gas emissions, encourage people to take a bus or bike, maintain campus grounds in an environmentally-friendly manner, promote ride-sharing, promote recycling, promote food from sustainable sources, and protect the Huron River.*

Members of the University community were most likely to say they were "very aware" or "somewhat aware" of the U-M's efforts to *promote recycling* (8 in 10) and least likely to give these responses to *protect the Huron River* (3 in 10).

Staff were more aware of several of the initiatives than faculty or students. Higher levels of awareness were reported by staff for *encouraging people to take a bus or bike, maintaining the campus grounds in an environmentally-friendly manner, promoting ride-sharing, promoting food from sustainable sources, and protecting the Huron River.* Not surprisingly, students knew less than either faculty or staff of the U-M's efforts to *promote ride-sharing* but more aware than staff or faculty of the U-M's work to *promote food from sustainable sources and reduce greenhouse gases.*

U-M Sustainability Initiatives Awareness Index. This indicator was created using a similar approach to that employed in creating the other awareness indicators. That is, respondents were assigned high scores to "a lot" responses while low scores were given to "not much/nothing" responses. These responses were then summarized for each individual and a mean score calculated for each respondent and summarized within each respondent group. These are shown in Table 18 indicating that staff was somewhat more knowledgeable about what the U-M was doing about sustainability than either students or faculty (5.4 versus 5.1 versus 4.9).

Table 18

***U-M SUSTAINABILITY INITIATIVES AWARENESS
INDICES, for STUDENTS, STAFF, FACULTY***

(percentage distributions and mean scores)

2012		All Students	Staff	Faculty
High	(7.51-10.00)	12	14	14
	(5.01-7.50)	38	42	40
	(2.51-5.00)	35	31	37
Low	(0-2.50)	15	13	9
Total		100	100	100
Mean Score		5.1	5.4	4.9
Number of respondents (unweighted)		4006	1069	1076

Other Key Findings and Indices

Among the other dimensions that define culture of sustainability on campus are the degree to which students, faculty, and staff are engaged in sustainable activities beyond the individual behaviors reported earlier, the extent to which they are committed to a sustainable lifestyle, and their inclinations or disposition toward establishing a more sustainable lifestyle. Efforts were made to measure these aspects as part of the student and faculty-staff questionnaires.

Engagement. There are numerous ways that people can be involved or engaged in sustainability activities, both on campus and elsewhere. In addition to the individual activities that have been explored thus far such as buying sustainable foods, turning off lights, using non-motorized or public transportation, students, faculty and staff can participate or engage in organized sustainability activities alone or in a group setting. In order to determine how much of this was taking place on campus, respondents were asked whether or not they had participated in a U-M sustainability organization, or in events including a *Planet Blue Open House*, *Earthfest*, *RecycleMania*, *Kill-a-Watt* or other events dealing with *Zero Waste* or *e-Waste Recycling*. Students were also asked if they had taken a *U-M course that addressed sustainability*.

The numbers of faculty, staff, and students who said that had participated in one of these activities or events was low. Faculty members were most engaged through participation in a *Planet Blue Open House* and an *e-Waste Recycling event* where just 1 in 5 responded affirmatively. Similarly, 1 in 5 staff said they had participated in a *Planet Blue Open House* while half as many students (1 in 10) said they had participated in this event. For each of the remaining U-M events or activities included in the questionnaires, 10 percent or less of the faculty and staff gave an affirmative answer when asked whether or not they participated.

U-M students too were not as engaged in sustainability activities on campus as expected. In fact, just 14 percent said they participated in one of the many *sustainability organizations on campus* and less than 1 in 5 (17 percent) said they had taken a *course that addressed sustainability*.

U-M Sustainability Engagement Index. Index scores were created for students and for staff and faculty and converted in a common metric ranging from 0 to 10. For students, three items were used; whether or not they were members of any *sustainability organization* on campus, whether or not they

had attended an *Earthfest*, and whether or not they had taken a *course that addressed sustainability*. The index for staff and faculty consisted of responses to the first two items dealing with membership in a campus sustainability organization and *Earthfest* attendance. As seen by the mean scores in Table 19, levels of engagement for all groups of respondents was relatively low with students having a mean value of 1.3 and faculty having a value of 0.7.

Table 19

**U-M SUSTAINABILITY ENGAGEMENT INDEX,
for STUDENTS, STAFF, FACULTY**
(percentage distributions and mean scores)

2012	Students	Staff	Faculty
High (7.51-10.00)	4	3	2
↑ (5.01-7.50)	7	0	0
↓ (2.51-5.00)	14	12	11
Low (0-2.50)	75	85	87
Total	100	100	100
Mean Score	1.3	0.9	0.7
Number of respondents (unweighted)	3996	1053	1060

In addition to examining sustainability engagement on campus, engagement in matters related to sustainability while student, staff, and faculty were not on campus was explored. Accordingly, a brief series of questions was asked about participation in selected sustainability-related activities during the past year. Specifically, staff, faculty and students were asked whether or not they had engaged in any of four activities to promote sustainability issues such as environmental protection, energy or water conservation, open space preservation, non-motorized transportation, and so forth. The four activities were: *given money to an organization or advocacy group* supporting one of the above issues, *volunteered for an organization or advocacy group* supporting one of the above issues, *served in a leadership position for an organization or advocacy group* supporting one of the above issues, and *voted for a candidate for public office because of his/her position* on one of the above issues.

Among the faculty, more than half (53 percent) answered “yes” when asked whether they had given money to an organization or advocacy group and 56 percent answered affirmatively when asked whether or not they voted for a candidate for public office because of his/her position. On the other hand, about 1 in 10 had volunteered for an environmentally-related organization or advocacy group.

For staff, a quarter had contributed money while 4 in 10 said they voted for a candidate for public office because of his/her position on an environmental issue. As in the case of faculty, staff members were not as likely as students to say they had volunteered for an organization or advocacy group or served in a leadership position in such an organization.

Students tended to contribute both time and money to support sustainability. More than 1 in 5 said they had volunteered for an organization or advocacy group during the past year and somewhat less than 1 in 5 had given money to an organization or advocacy group supporting an environmental issue during the past year. Finally, a third had voted for a candidate for public office because of his/her position on environmental issues.

General Sustainability Engagement Index. The four items were combined to create another engagement index which in part demonstrates a degree of commitment toward sustainability. The index scores shown in Table 20 suggest that despite relatively low levels of engagement in sustainability through philanthropy, volunteerism, and voting behavior, members of the University community were more engaged off-campus than while on-campus. Furthermore, faculty members have a higher level of general engagement than staff or students, reflected in large part by their voting behavior and financial contributions.

Table 20

GENERAL SUSTAINABILITY ENGAGEMENT INDEX, for STUDENTS, STAFF, FACULTY

(percentage distributions and mean scores)

2012		Students	Staff	Faculty
High	(7.51-10.00)	2	1	1
	↑ (5.01-7.50)	6	3	6
	↓ (2.51-5.00)	12	18	35
Low	(0-2.50)	80	78	58
Total		100	100	100
Mean Score		1.9	1.9	3.0
Number of respondents (unweighted)		4014	1071	1081

Commitment. Clearly, commitment to sustainability is demonstrated in part by the actions that people take and their behaviors on a day-to-day basis, both on-campus and off-campus. But the degree to which people believe they are committed to a sustainable way of life can also reflect the culture of sustainability. Accordingly, respondents were asked two questions near the end of the questionnaire. One asked, “Overall, how committed are you to sustainability?” with the following response categories: *very committed, somewhat committed, not very committed, and not at all committed*. The second question was, “Who are or what has been most influential in shaping your views about sustainability?”³²

Faculty members were most committed to sustainability with a quarter of them saying they were *very committed*. About 1 in 7 students and staff gave this response. While the majority of respondents from each group said they were somewhat committed, there was a significant number who said they were *not very committed* or *not committed at all* to sustainability; 12 percent of faculty, 22 percent of the staff and one-fourth of the student body indicated they were uncommitted. Among all students, those in graduate school reported the highest level of commitment.

Respondents were given a range of options as to who or what was most influential in shaping their views about sustainability and also the option of writing in a response. For faculty, various forms of media (newspapers, TV, books, etc.) had the greatest impact on their level of commitment followed by friends and family members. Friends and family were most influential among the staff while friends or classmates were most influential in shaping the views of students. The influence of U-M professors and instructors on student views increased in importance for each cohort of undergraduates. Only 5 percent of freshmen identified the role of faculty in shaping their views while 14 percent of sophomores, 17 percent of juniors and 22 percent of seniors mentioned U-M professors/instructors as being influential.

³² For a complete list of responses to both questions for each student cohort and for staff and faculty, see Appendix C, Table 16.

Commitment Index. Responses to the commitment question were quantified and the values were recalculated for the 0 to 10 scale. As Table 21 shows, self-reported levels of commitment to sustainability are higher among faculty than among students or staff.

Table 21

***COMMITMENT INDEX SCORES,
for STUDENTS, STAFF, FACULTY***
(percentage distributions and mean scores)

2012	Students	Staff	Faculty
High (7.51-10.00)	15	13	25
↑ (5.01-7.50)	61	65	63
↓ (2.51-5.00)	22	20	11
Low (0-2.50)	2	2	1
Total	100	100	100
Mean Score	6.3	6.3	7.0
Number of respondents (unweighted)	4014	1068	1074

Dispositions

Another category of questions asked respondents about their dispositions and related attitudes. Disposition questions were asked in nearly every module of the questionnaires and covered topics such as asking respondents to explain certain behaviors --- for example, identifying the primary reason a faculty or staff member drives to work or the importance of being able to bike or walk to campus when the respondent moved to their current residence. A second category of disposition questions asked respondents to consider a range of attitudes such as whether they disagreed or agreed with statements like people should recycle even if it is inconvenient or that people should use public transportation, like buses or trains, even if it is less convenient. Other dispositions questions asked respondents to describe their level of concern about things like population growth, why respondents think buying sustainable food is important, their willingness to support certain policies promoting things such as renewable energy, their willingness to pay for expanded sustainability initiatives at the U-M, and the frequency to which they have encouraged their friends to do certain sustainability related behaviors (recycle, conserve water, use alternative transportation, etc.). Finally, student respondents were asked to consider sustainability scenarios and state how likely things like sustainable transportation or reducing their greenhouse gas emissions will be priorities for them in the future. Responses to these questions can be found in Appendix C, Tables 3, 6, 9, 12, and 16.

Some interesting results can be found in reviewing several of the disposition questions. Respondents were asked to state whether they supported or opposed four different hypothetical government policies including *a requirement that electric utilities produce at least 40% of their electricity from wind, solar, or other renewable energy sources, even if it costs the average household an extra \$100 a year*. Five in 10 students and staff responded that they “strongly support” or “moderately support” an increase in utility rates to support more renewables and less than 3 in 10 students and staff selected “moderately oppose” or “strongly oppose”. More than 7 in 10 faculty, though, reported that they “strongly support” or “moderately support” such an increase.

Respondents were also asked about their willingness to pay for efforts to help promote the following campus sustainability initiatives: *expand waste prevention efforts, such as recycling and green*

purchasing at U-M; expand alternative transportation efforts such as buses, bikes, and carpools at U-M; and expand efforts to lower greenhouse gas emissions at U-M through energy conservation and renewable sources. Respondents were offered 6 different options of \$10 increments from \$0 to \$41-\$50. Roughly 3 in 10 students supported all these efforts at the \$1-\$10 level. Highest response rates for staff were at the \$0 level (34-40%). However, the highest response rates for faculty, 3 in 10, were for the \$41-\$50 level of support for these items. Overall, faculty reported the highest levels of support across all the willingness to pay questions.

Disposition Index. Responses to the willingness to pay questions were quantified and the values were recalculated for the 0 to 10 scale. Based on the results in Table 22, and as noted above, faculty appear to be more disposed than students and staff to pay for the U-M sustainability initiatives described above.

Table 22

***DISPOSITION TOWARD SUSTAINABILITY INDEX,
for STUDENTS, STAFF, FACULTY***
(percentage distributions and mean scores)

2012		Students	Staff	Faculty
High	(7.51-10.00)	12	10	33
↑	(5.01-7.50)	12	13	19
↓	(2.51-5.00)	31	21	20
Low	(0-2.50)	45	56	28
Total		100	100	100
Mean Score		3.5	2.9	5.3
Number of respondents (unweighted)		3997	1051	1058

Evaluation of the U-M's Sustainability Initiatives. Earlier, we reported the degree to which staff, faculty and students were aware of various efforts put forth by U-M officials to create a more sustainable campus. For those respondents who indicated some level of awareness of each of eight initiatives, they were then asked to rate or grade its success or performance. Findings shown in the second part of Appendix C, Table C15 reveal that, on average, staff and students gave the University “fair” to “good” grades. Highest grades were given to *promoting recycling* while the lowest grades were assigned to *promoting food from sustainable sources*.

Slightly better grades were assigned by students than by staff with faculty giving the lowest grades. For instance, nearly half of the students rated the U-M’s efforts to *promote food from sustainable sources* as either “very good” or “good” compared to 38 percent of the staff and just 30 percent of faculty. And for respondents who were aware of efforts to *encourage ride sharing*, 70 percent of the students said “very good” or “good”, two-thirds of the staff gave these ratings as did somewhat more than half of the faculty.

U-M's Sustainability Initiatives Ratings Index. A summary index score was calculated for respondents who indicated some level of awareness for each of the eight U-M sustainability initiatives.³³

³³As in the case of other indices, respondents who did not rate more than two U-M initiatives were eliminated when creating the ratings index. On occasion, some of the remaining respondents skipped one of the questions comprising the index. For these situations respondents who did not rate one or two items were assigned the modal rating of those items for their entire group e.g. the modal value for students, staff or faculty. See Appendix D for a detailed discussion of index construction.

Table 23 shows that, the overall performance ratings of the U-M's sustainability initiatives were fairly comparable among staff, faculty, and students.

Table 23

U-M SUSTAINABILITY INITIATIVES RATING INDICES, for STUDENTS, STAFF, FACULTY

(percentage distributions and mean scores)

2012		All Students	Staff	Faculty
High	(7.51-10.00)	25	24	17
	(5.01-7.50)	55	59	63
	(2.51-5.00)	19	16	20
Low	(0-2.50)	1	1	**
Total		100	100	100
Mean Score		6.6	6.7	6.4
Number of respondents (unweighted)		3257	803	731

Summary

Table 24 summarizes the mean scores for the 15 cultural sustainability indicators for students, staff, and faculty. The scores reveal several things. First, there is considerable room for improvement with regard to the behaviors, levels of awareness, degrees of engagement and expressed commitment to sustainability among members of the University community.

Table 24

SUMMARY SUSTAINABILITY CULTURAL INDICATORS for STUDENTS, STAFF, FACULTY

(mean scores)

2012		Students	Staff	Faculty
PRIMARY				
<i>Climate Action</i>				
Conservation Behavior		6.1	6.6	6.9
Travel Behavior		8.2	1.6	2.2
<i>Waste Prevention</i>				
Waste Prevention Behavior		6.6	7.0	7.3
<i>Healthy Environments</i>				
Sustainable Food Purchases		5.5	5.7	6.3
Protecting the Natural Environment		8.6	6.5	6.1
<i>Community Awareness</i>				
Sustainable Travel & Transportation		4.4	3.0	3.4
Waste Prevention		4.0	5.0	5.1
Natural Environment Protection		3.1	4.1	4.3
Sustainable Foods		4.3	4.7	5.6
U-M Sustainability Initiatives		5.1	5.4	4.9
SECONDARY				
Sustainability Engagement at U-M		1.3	0.9	0.7
Sustainability Engagement Generally		1.9	1.9	3.0
Sustainability Commitment		6.3	6.3	7.0
Sustainability Disposition		3.5	2.9	5.3
Rating U-M Sustainability Initiatives		6.6	6.7	6.4

Second, the behaviors of students are far more in tune with the goal of greenhouse gas reduction than the behaviors of staff and faculty. This is largely due to differences in the ways each group travels to and from campus. Students are also likely to know more about transportation options available to them and are more engaged than either staff or faculty in sustainability activities on campus.

Third, compared to students and staff, faculty tend to act in a more sustainable manner with respect to conserving energy, preventing waste, purchasing food , and more generally, engaging in pro-environmental activities outside of the University. Faculty members also express a higher level of commitment to sustainability than others on campus.

Finally, students tend to be less knowledgeable than staff or faculty about protecting the natural environment, preventing waste, and sustainable foods. But they are more aware than faculty about what is happening at the U-M with regard to sustainability. Nonetheless, members of the staff are most aware of the range of the U-M's sustainability initiatives.

There are additional ways of summarizing sustainability index scores and it is anticipated that many will be examined according to the interests of University personnel and others who work with the 2012 survey data. One way is to see how indicators vary for respondents associated with different parts of the U-M Ann Arbor campus. For example, index scores can be calculated for University employees whose primary work place is located in the different campuses and regions making up the U-M.³⁴ Table 25 summarizes indicators for respondents (staff and faculty together) by the campus where they have their primary office or place of employment. In part, these campuses (and the Health Sciences region) are defined by Plant Operation as maintenance zones. It should be noted that the numbers of respondents from South Campus and from East Campus are relatively small and therefore the index scores are estimates with large errors (see Appendix E, Figures E5 and E6).

For the most part, there are small variations in scores across the different parts of the University. However, many of the index scores for Medical Campus employees tend to be lower and despite its small sample size, South Campus employees tend to have relatively high scores on a number of indicators. It is not surprising to see that the travel behavior index scores are higher for employees working the two Central Campus regions and in the Health Sciences region than those working in other parts of the University. And despite the low values, more faculty and staff from Central Campus' east region and South Campus are engaged in sustainability activities in sustainability activities on campus than employees working elsewhere at the U-M.

³⁴ Regions are defined by the U-M Plant Operations for administrative/operational purposes. Several buildings within the Health Sciences region are often included in as part of the Medical Campus.

Table 25

***SUMMARY SUSTAINABILITY CULTURAL INDICATORS
For STAFF/FACULTY, by CAMPUS AND REGION***

(mean scores)

2012	Central Campus West	Central Campus East	North Campus	Medical Campus	Health Sciences	South Campus	East Campus
PRIMARY							
<i>Climate Action</i>							
Conservation Behavior	7.1	7.1	7.1	5.9	6.7	7.6	6.8
Number of respondents	357	220	277	494	320	78	83
Travel Behavior	3.1	3.6	1.9	1.0	2.8	0.7	0.4
Number of respondents	364	223	285	525	323	79	85
<i>Waste Prevention</i>							
Waste Prevention Behavior	7.2	7.3	7.2	6.5	7.2	7.6	7.2
Number of respondents	363	223	285	524	323	79	85
<i>Healthy Environments</i>							
Sustainable Food Purchases	6.0	5.8	5.9	5.6	5.8	5.9	5.5
Number of respondents	352	219	274	503	316	75	83
Protecting the Natural Environment	6.4	7.1	6.8	6.1	6.4	6.3	6.4
Number of respondents	289	171	222	456	278	70	75
<i>Community Awareness</i>							
Sustainable Travel & Transportation	3.7	4.0	3.7	2.6	3.6	3.6	2.9
Number of respondents	363	223	284	521	322	79	85
Waste Prevention	5.2	5.5	5.2	4.4	5.0	6.4	5.6
Number of respondents	364	223	285	525	323	79	85
Natural Environment Protection	3.8	4.1	4.1	3.9	4.2	4.9	4.3
Number of respondents	364	223	285	525	323	79	85
Sustainable Foods	5.2	5.5	5.0	4.7	4.9	5.0	4.9
Number of respondents	364	223	285	525	323	79	85
U-M Sustainability Initiatives	5.3	5.3	5.3	5.1	5.5	6.2	5.8
Number of respondents	363	222	284	522	323	79	84
SECONDARY							
Sustainability Engagement at U-M	1.1	1.3	0.8	0.3	1.0	2.5	0.8
Number of respondents	353	218	278	518	317	78	85
Sustainability Engagement Generally	2.5	2.5	2.3	1.7	2.4	2.3	1.8
Number of respondents	363	222	285	525	321	79	84
Sustainability Commitment	6.8	6.8	6.5	6.1	6.7	6.8	6.5
Number of respondents	363	222	282	522	320	79	85
Sustainability Disposition	3.8	3.9	3.8	2.8	3.7	3.6	3.2
Number of respondents	357	216	278	515	320	79	83
Rating U-M Sustainability Initiatives	6.4	6.9	6.6	6.6	6.9	6.7	7.0
Number of respondents	243	153	207	388	245	69	65

E. A GLIMPSE INTO THE FUTURE

At the beginning of this report, it was emphasized that SCIP is a multi-year effort designed to measure and track the *culture of sustainability* on the U-M's Ann Arbor campus. This report is a culmination of the first year and based on its findings including a set of cultural indicator scores, portrays that culture as of 2012. In the months ahead, a second wave of data will be collected from samples of students, staff and faculty so as to see if there have been changes in the culture of sustainability over the year as a result of University initiatives and other factors. Specifically, a web-survey, similar in content to what

was used in 2012, will be administered in fall, 2013 to representative samples of staff and faculty while a parallel survey will be administered to three groups of students.³⁵

The first group will consist of all undergraduate students who responded to the 2012 questionnaires.³⁶ This approach will enable us to determine if and by how much there are behavioral and attitudinal changes among individuals. Since we anticipate that some of the Year 1 respondents will not participate in the Year 2 data collection, a second and supplemental group of students will be selected from the sophomore, junior, and senior classes with the goal of obtaining a total of 1000 respondents from each cohort. The third group will consist of a sample of first-year students so as to produce 1000 respondents representing the freshmen class.³⁷ This overall approach will enable us to determine if and by how much there are behavioral and attitudinal changes for each student cohort. It is anticipated that a report covering Year 2 findings and indicator changes (if any) will be available in summer, 2014.

On-Going Analysis of 2012 Data

As mentioned earlier, findings covered in this report are primarily descriptive showing differential responses among the U-M's students, staff, and faculty. It is expected that the data will be further mined in order to test hypotheses and consider factors that may be associated with indicator scores. For example, it is possible that, for faculty and staff, demographic characteristics such as gender, housing tenure and length of residence may influence people's behavior vis-à-vis protecting the natural environment. Or the data can be examined to see if there are differential indicator scores for students and faculty associated with different schools and colleges. While some of these analyses will be determined by members of the research team, others will emanate from questions posed by potential users of the findings. These users include U-M officials and staff associated with the Office of Campus Sustainability, Plant Operations, University Housing, Parking and Transportation, the University Hospital, Food Services and others. Similarly, faculty members who teach and/or conduct research on one or more facets of sustainability may want to examine the data. In anticipation of such requests, mechanisms are currently being developed so as to provide those making inquiries with access to and guidance in using the data.

It is also anticipated that 2012 SCIP data will be analyzed in conjunction with contextual data derived from other sources. For example, the Office of Campus Sustainability has been collecting and reporting various environmental metrics or indicators covering the entire University and individual buildings for several years.³⁸ Environmental indicators for individual buildings might be merged with survey data covering occupants of those buildings allowing relationships to be examined between specific environmental measures and associated behaviors and attitudes. In subsequent years when longitudinal survey data are available, it will be possible to look at the degree to which changes in environmental conditions impact changes in behaviors and vice versa. Such work could contribute to the development of predictive models demonstrating how changes in behavior impact operating expenditures. For instance, it would be possible to develop a model showing how an X change in the conservation index score results in a Y savings in annual energy costs.

The relatively large numbers of student, faculty and staff respondents have enabled us to consider index scores by campuses, regions, and in some cases, sub-regions. This presents opportunities for University officials to conduct experiments or trial programs in some places and not in others in order to test a new

³⁵Based on experiences with the 2012 questionnaire, the 2013 questionnaire has added questions, slightly modified others, and eliminated several questions. The net result should result in a shorter and easier to complete questionnaire.

³⁶ Seniors who have graduated will not be asked to participate in the second year survey.

³⁷ A new representative sample of graduate students will be selected so as to yield approximately 400 respondents.

³⁸ See <http://sustainability.umich.edu/report/2012/> and <http://www.ocis.umich.edu/reporting.html>

initiative. For example, consideration might be given to launching a new form of recycling or a new marketing strategy for energy conservation in some regions (or sub-regions) and not in others. Examining relevant behavioral responses in the two types of regions (experimental and non-experimental) could help in determining the degree to which the new initiative has been successful.

It is anticipated that, throughout the subsequent years of SCIP, there will be increasing opportunities to use data collected in 2012.

Dissemination

Because of the groundbreaking nature of SCIP, its relationship to the many U-M initiatives designed to promote sustainability throughout the University and its importance in addressing cultural issues and behavioral change when dealing with complex and pressing environmental problems, we are eager to see the program replicated elsewhere. We believe that such efforts will be beneficial to other universities and colleges as well as to other types of institutions, corporations, and cities where movements toward a more sustainable future are taking place. It is our belief that in order for those movements to be successful, consideration needs to be given to changing the culture of sustainability within the setting. The U-M is doing so as part of its overall sustainability initiative and SCIP is the vehicle for measuring that change and assessing its impacts.

Accordingly, we are eager to share our work with interested parties in several ways. First, materials covered in this first year report about SCIP including its questionnaires are now available on the web.³⁹ Second, we are making efforts to discuss our work at professional and academic meetings and will continue to do so in the months ahead. Over the past year, for example, we have discussed our work in Brazil, India, Taiwan and Ireland in addition to venues throughout the U.S. Finally, the Graham Institute will be available to address questions concerning the process used in carrying out SCIP, its experiences in communicating findings to University officials and others, and in the ways in which the work has contributed to decision making in University operations and teaching on campus.

³⁹ See: <http://www.graham.umich.edu/leadership/scip>

Appendix A. Methodology

The selection of the sample of students was made by the U-M Office of the Registrar. In order to be eligible for selection, two key sample parameters were identified and defined the sampling frame --- 1) full-time undergraduate, graduate and professional students, and 2) students who were registered for the fall semester on the Ann Arbor campus.

The selection of the sample of staff and faculty was made by U-M's Human Resources Records and Information Services. Sample parameters included employees --- 1) who were eligible for benefits (employees who had a 50 percent or greater appointment) and 2) who were employed at one of the University's Ann Arbor campuses --- Central Campus, Medical Campus, East Campus, North Campus, South Campus or an ancillary location in Ann Arbor).

In order to reach the targeted number of students from each undergraduate cohort and from graduate and professional students, names were selected from each group (strata) who were contacted and invited to participate in the survey. Similarly, separate names of staff and faculty were selected and contacted. A total of 11,000 students, 2,250 faculty and 1,250 staff were contacted.

Those whose names fell into their respective samples were first sent a letter from President Mary Sue Coleman inviting them to participate in the survey. In order to determine the best way of yielding responses, an experimental approach was used in distributing the letter. Half of the sampled names from each group were sent signed paper letters from the Office of the President while the other half were sent an email linked presidential letter from the Institute for Social Research. The initial letters along with the link to the web survey were sent during the third week in October 2012 whereas the mail invitations (and the survey link) were sent out approximately one week later.⁴⁰ Response rates for those contacted through the mail (i.e. the paper letter) and those contacted by the letter sent electronically were similar indicating that the mode of delivery made no difference. As a result, the more economical electronic contacts will be used in reaching the sample in the SCIP 2013 survey.

Completed Questionnaires. Among the students who received the invitation letter, 5021 went to the website link to the questionnaire. Eighty percent (4018) of those who accessed the link answered enough questions (more than 80 percent of the questions--- at least 161 out of the total of 196 questions) to be considered a completed interview. Among the staff and faculty, 2,492 went to the website link to the questionnaire. Almost ninety percent (2,166) of those who accessed the link answered enough questions (at least 161 out of the total of 200 questions) to be considered a completed interview.

Response rates. Student response rates for cohorts reported in Table 2 in the report are based on figures provided by the Registrar's office. As noted, some students identified themselves with a higher or lower class than their official designation. For example, 14 students or 1.4 percent of those who were officially designated as freshmen said they were sophomores. And 192 students who identified themselves as freshmen were sophomores according to the Office of the Registrar.⁴¹

Inducements and Incentives. A key factor influencing response rates is the set of inducements and incentives for the students, staff, and faculty who fell into the sample. The initial personalized letter from President Mary Sue Coleman emphasized the important of the survey and the recipient's

⁴⁰ In order to achieve similar totals of completed faculty and staff surveys, an additional staff sample of 710 names were selected and email invitations were sent to them.

⁴¹ A table showing all the mismatches between the official university records of the Registrar's Office and the self-reported status of students can be found in the complete SCIP Year 1 Methodology Report at: <http://graham.umich.edu/leadership/scip/materials> Data presented in this report are based on student self-reports of their status.

participation. Follow-up reminders to those who had not responded were also important in encouraging recipients to participate.

In this regard, a second experiment was initiated involving the use of a video by John Beilein, head coach of U-M's men's basketball team. The experiment involved the use of a one-minute reminder video clip prepared by U-M's Athletic Department. The video showed Coach Beilein talking about the importance of the sustainability survey, saying that he had wished he had been selected to participate, and urging the recipient to respond. His message was interspersed with short clip of the team in action. The video reminder was sent to half of the non-responders along with a standard email reminder from ISR about two weeks after the launch of the survey. The other half of the non-respondents received just the standard email reminder email from ISR. The experiment revealed a positive effect of the Beilein video which produced an 8 percent increase in the overall response rate. In anticipation of a positive outcome from the experiment, the Beilein video was sent to all the remaining non-responders one week later and the experiment was launched.

Finally, a monetary incentive was offered to those completing the survey. In the initial letter from ISR (following the President Coleman letter), the following paragraph was included.

Once you submit your completed survey, **you will be eligible to win a \$50 e-certificate** to your choice of iTunes, Amazon, or Barnes & Noble. [Ten (10) first year/sophomore/junior/senior students] [Four (4) graduate students] [Seven (7) staff members/faculty], or about 1 of every 100 who complete the survey will win!

When the survey was completed, an email message was sent thanking the participant for completing the survey, indicating a contact for subsequent comments or questions they might have, and finally, telling them that randomly selected \$50 e-certificate winners would be notified later in the semester.

Weighting. Sample weights have been applied so that results/statistics reported from the surveys correctly represent the populations from which the samples were drawn. This is especially necessary when using a stratified sampling approach.

Sample weights were created to adjust for grade and gender differences compared to the entire student population. One weight was created to reflect only the undergraduates and another weight was created to represent the entire student population, including graduate students.

For the staff and faculty samples, weights were created to adjust for gender and whether or not the employee had U-M Health System status. Detailed tables showing the percent of participants from each key group and the true percent of the corresponding population are shown in the complete SCIP Year 1 Methodology Report.⁴² The true values were used in creating the weights used in analyzing the 2012 data.

⁴² The Methodology Report can be found at: <http://graham.umich.edu/leadership/scip/materials>

Appendix B: Demographic Characteristics of the Respondents

In addition to asking about their status at the U-M, their housing situation, and where within the campus they studied or worked, students, staff, and faculty were asked a limited number of demographic questions that may be associated with their responses to the substantive questions about sustainability. The demographic questions about gender and age were also asked to ensure that the sample represented all segments of the student and U-M employees. It is anticipated that these demographic characteristics will be examined more thoroughly in subsequent analysis of the SCIP Year 1 data. The distributions of responses to the student and staff-faculty demographic questions are shown below.

Table B1

STUDENT DEMOGRAPHIC CHARACTERISTICS

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students
		Fresh	Soph	Junior	Senior	
Gender						
Female	49	49	52	48	49	49
Male	50	51	47	51	50	50
Chose not to respond, transgender	1	**	1	1	1	1
Total	100	100	100	100	100	100
Age of student						
18-19	44	99	71	3	1	44
20-21	44	1	26	90	60	44
22-23	10	0	1	4	34	10
24 and older	2	**	2	3	5	2
Total	100	100	100	100	100	100
Mean Age (based on year of birth)	22.6	18.3	19.5	20.6	21.8	20.0
2012						

** Less than one half of one percent

* Percentage distributions are based on the weighted number of respondents to each question. The actual number of respondents for each question is shown below.

Number of respondents	3970	1064	816	902	743	3525	441
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Table B2

STAFF/FACULTY
DEMOGRAPHIC CHARACTERISTICS
(percentage distribution)*

2012	Staff	Faculty
<u>Gender</u>		
Female	65	39
Male	32	58
Chose not to respond, transgender	3	3
Total	100	100
<u>Age of respondent</u>		
Under 25	5	0
25-29	14	2
30-39	23	26
40-49	26	28
50-59	24	25
60-69	8	16
70 and older	**	3
Total	100	100
Median Age	42.8	47.8
<u>Educational Attainment</u>		
High school graduate or less	2	0
Some college	16	0
College graduate	41	1
Graduate or professional degree	40	97
Other	1	2
Total	100	100
Number of respondents	1057	1068
<u>Household Income (2011)</u>		
Less than \$50,000 [#]	28	3
\$50,000-74,999	23	9
\$75,000-\$99,000	20	11
\$100,000-\$149,999	19	23
\$150,000-\$199,999	7	21
\$200,000 or more	3	33
Total	100	100
Median Household Income (2011)	\$ 68,900	\$ 159,500
Number of respondents	1020	1024

**Less than one half of one percent

Assumes mean income is \$45,000

* Percentage distributions are based on the weighted number of respondents to each question. The actual number differs since not all questions were answered by all respondents.

Appendix C: Response Distribution Tables

The following tables show complete survey responses to all substantive questions for each undergraduate student cohort, graduate students, staff and faculty. Responses to questions about survey participants are presented in Section B while responses to demographic questions are covered in Appendix B.

Appendix Table C1

TRAVEL & TRANSPORTATION - AWARENESS

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty			
		Fresh	Soph	Junior	Senior						
How much do you know about:											
AATA/"The Ride"											
A lot	19	7	13	16	22	14	27	14			
A fair amount	33	28	30	33	35	32	35	21			
A little	30	44	37	33	29	36	20	31			
Not much/nothing	18	21	20	18	14	18	18	31			
Total	100	100	100	100	100	100	100	100			
U-M buses											
A lot	40	44	51	53	50	49	26	14			
A fair amount	30	35	27	29	32	31	27	25			
A little	19	16	17	15	12	15	25	31			
Not much/nothing	11	5	5	3	6	5	22	36			
Total	100	100	100	100	100	100	100	100			
Biking in Ann Arbor											
A lot	11	7	12	14	16	12	11	9			
A fair amount	22	20	20	25	25	23	21	16			
A little	35	33	35	33	32	33	36	28			
Not much/nothing	32	40	33	28	27	32	32	47			
Total	100	100	100	100	100	100	100	100			
Hourly car rental (e.g. Zipcar)											
A lot	6	2	4	5	7	4	8	2			
A fair amount	10	5	8	8	10	8	13	6			
A little	27	25	26	30	26	27	29	25			
Not much/nothing	57	68	62	57	57	61	50	68			
Total	100	100	100	100	100	100	100	100			
U-M Zimride											
A lot	1	1	1	2	1	1	**	**			
A fair amount	2	2	2	2	2	2	1	1			
A little	7	8	10	7	7	8	7	6			
Not much/nothing	90	89	87	89	90	89	92	93			
Total	100	100	100	100	100	100	100	100			
U-M Vanpools											
A lot							3	1			
A fair amount							9	3			
A little							28	21			
Not much/nothing							60	75			
Total							100	100			

Appendix Table C1 (continued)

TRAVEL & TRANSPORTATION - AWARENESS

(percentage distribution)*

2012	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
<i>How much do you know about:</i>									
U-M Greenride									
A lot	**	1	1	1	1	1	0	1	**
A fair amount	1	1	1	1	1	1	**	1	1
A little	5	6	6	4	5	5	4	6	3
Not much/nothing	94	92	92	94	93	93	96	92	96
Total	100	100	100	100	100	100	100	100	100
AATA ExpressRide									
A lot							1	1	
A fair amount							5	2	
A little							15	12	
Not much/nothing							79	85	
Total							100	100	
AATA Emergency Ride Home									
A lot	2	3	3	3	4	3	1	3	1
A fair amount	12	17	12	13	14	14	8	6	3
A little	31	38	35	34	36	36	23	23	20
Not much/nothing	55	42	50	50	46	47	68	68	76
Total	100	100	100	100	100	100	100	100	100

* Percentage distributions are based on the weighted number of respondents to each question. The actual number of respondents for each question differs since not all questions were answered by all respondents. The minimum number of respondents for each group of students and for faculty and staff is shown below.

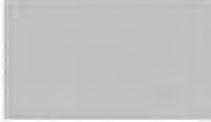
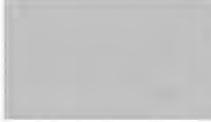
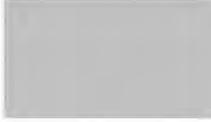
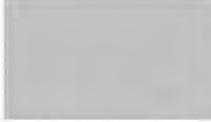
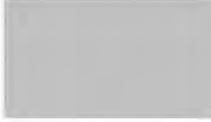
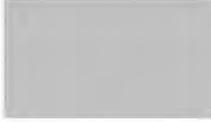
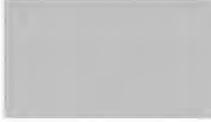
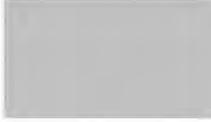
** Less than one-half of one percent

Number of respondents	4006	1071	825	904	753	3553	445	1059	1070
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Appendix Table C2

TRAVEL & TRANSPORTATION - BEHAVIOR

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior			
<i>During the past year, how often did you do the following to travel between where you lived and campus:</i>								
Drive a car and park on campus								
Never	54	84	69	57	44	64	37	
Rarely	20	11	17	21	25	18	23	
Sometimes	16	3	10	17	21	13	23	
Always/Most of the time	10	2	4	5	10	5	17	
Total	100	100	100	100	100	100	100	
Walk								
Never	15	10	5	9	8	8	28	
Rarely	7	4	3	4	5	4	11	
Sometimes	16	9	11	16	15	13	21	
Always/Most of the time	62	77	81	71	72	75	40	
Total	100	100	100	100	100	100	100	
Bike								
Never	68	80	70	60	62	68	67	
Rarely	9	6	9	11	11	9	8	
Sometimes	12	9	11	15	15	13	13	
Always/Most of the time	11	5	10	14	12	10	12	
Total	100	100	100	100	100	100	100	
Take an AATA bus								
Never	50	54	55	54	57	55	42	
Rarely	22	29	26	25	22	26	17	
Sometimes	15	13	14	13	13	13	18	
Always/Most of the time	13	4	5	8	8	6	23	
Total	100	100	100	100	100	100	100	
Take a U-M bus								
Never	35	13	20	26	32	23	56	
Rarely	18	19	25	21	20	21	13	
Sometimes	21	23	27	24	24	24	14	
Always/Most of the time	26	45	28	29	24	32	17	
Total	100	100	100	100	100	100	100	
Carpool								
Never	66	68	66	58	61	63	71	
Rarely	21	20	22	22	23	22	18	
Sometimes	12	11	11	18	15	14	10	
Always/Most of the time	1	1	1	2	1	1	1	
Total	100	100	100	100	100	100	100	

Appendix Table C2 (continued)

TRAVEL & TRANSPORTATION - BEHAVIOR

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior			
<i>During the past year, how often did you do the following to travel between where you lived and campus:</i>								
Use U-M Greenride								
Never	98	98	98	99	98	98	98	
Rarely	2	1	2	1	1	1	2	
Sometimes	**	1	**	0	0	1	**	
Always/Most of the time	**	**	0	0	0	**	**	
Total	100	100	100	100	100	100	100	
U-M Vanpools								
Never	99	98	98	99	99	99	99	
Rarely	1	1	2	1	1	1	1	
Sometimes	0	1	**	**	**	**	**	
Always/Most of the time	0	0	0	0	0	0	**	
Total	100	100	100	100	100	100	100	
AATA ExpressRide								
Never	97	98	97	98	99	98	97	
Rarely	2	1	2	1	1	1	2	
Sometimes	1	1	1	1	**	1	**	
Always/Most of the time	**	0	0	0	0	0	1	
Total	100	100	100	100	100	100	100	
Use motorcycle, moped, or scooter								
Never	97	99	98	97	98	98	97	
Rarely	2	1	2	1	1	1	2	
Sometimes	1	**	**	1	1	1	**	
Always/Most of the time	**	**	0	1	0	**	1	
Total	100	100	100	100	100	100	100	
Use Park and Ride								
Never	95	98	95	95	96	96	93	
Rarely	2	1	2	2	1	2	3	
Sometimes	2	**	2	2	2	1	2	
Always/Most of the time	1	1	1	1	1	1	2	
Total	100	100	100	100	100	100	100	

Appendix Table C2 (continued)

TRAVEL & TRANSPORTATION - BEHAVIOR

(percentage distribution)*

2012	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
<i>Since the start of the fall semester, how do you most often travel to and from campus?</i>									
Drive a car	13	8	10	8	12	9	18		
Walk	48	48	61	54	61	56	35		
Bike	9	3	8	13	10	8	9		
Ride the bus	24	34	15	19	14	21	29		
Ride the bus and bike	2	1	2	2	2	2	4		
Ride share	2	4	2	1	0	2	1		
Motorcycle, moped, or scooter	**	0	0	1	0	0	1		
Park and ride	1	1	1	1	1	1	2		
Other	1	1	1	1	0	1	1		
Total	100	100	100	100	100	100	100		
<i>During the past year, how often did you do the following travel to/from your home and your U-M workplace?</i>									
Drive a car							8	7	
Never							9	12	
Rarely							9	10	
Sometimes							74	71	
Always/Most of the time							100	100	
Total									
Walk							75	58	
Never							6	15	
Rarely							10	16	
Sometimes							9	11	
Always/Most of the time							100	100	
Total									
Bike							83	67	
Never							7	12	
Rarely							6	13	
Sometimes							4	8	
Always/Most of the time							100	100	
Total									
Take an AATA bus							73	67	
Never							9	14	
Rarely							10	13	
Sometimes							8	6	
Always/Most of the time							100	100	
Total									

Appendix Table C2 (continued)

TRAVEL & TRANSPORTATION - BEHAVIOR

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All		
<i>During the past year, how often did you do the following travel to/from your home and your U-M workplace?</i>								
Take a U-M bus								
Never						72	80	
Rarely						10	11	
Sometimes						10	7	
Always/Most of the time						8	2	
Total						100	100	
Carpool								
Never						79	85	
Rarely						10	9	
Sometimes						8	4	
Always/Most of the time						3	2	
Total						100	100	
Use U-M Greenride								
Never						99	99	
Rarely						**	**	
Sometimes						**	**	
Always/Most of the time						1	1	
Total						100	100	
U-M Vanpools								
Never						97	99	
Rarely						**	**	
Sometimes						**	**	
Always/Most of the time						3	1	
Total						100	100	
AATA ExpressRide								
Never						97	98	
Rarely						1	1	
Sometimes						1	**	
Always/Most of the time						1	1	
Total						100	100	
Use motorcycle, moped, or scooter								
Never						97	97	
Rarely						1	1	
Sometimes						1	1	
Always/Most of the time						1	1	
Total						100	100	

Appendix Table C2 (continued)

TRAVEL & TRANSPORTATION - BEHAVIOR

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All		
<i>During the past year, how often did you do the following travel to/from your home and your U-M workplace?</i>								
Use Park and Ride								
Never						91	94	
Rarely						4	3	
Sometimes						3	1	
Always/Most of the time						2	2	
Total						100	100	
Worked from home/telecommuted								
Never						78	55	
Rarely						13	20	
Sometimes						8	23	
Always/Most of the time						1	2	
Total						100	100	
<i>How do you most often travel to/from home to your work place?</i>								
Drive a car						78	74	
Walk						5	10	
Bike						2	7	
Ride the bus						8	5	
Ride the bus and bike						1	1	
Motorcycle, moped, or scooter						**	**	
Park and ride						1	1	
Other						5	2	
Total						100	100	

Appendix Table C2 (continued)

TRAVEL & TRANSPORTATION - BEHAVIOR

(percentage distribution)*

2012	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
<i>During the past year, how often did you do the following to travel between your home and places for shopping, recreation, etc.:</i>									
Drive a car									
Never	14	27	17	13	6	16	9	1	1
Rarely	14	18	20	13	13	16	12	2	3
Sometimes	33	23	39	42	39	35	30	11	15
Always/Most of the time	39	32	24	32	42	33	49	86	82
Total	100	100	100	100	100	100	100	100	100
Walk									
Never	11	10	7	8	9	8	15	35	23
Rarely	14	14	8	11	10	11	19	22	23
Sometimes	39	31	32	35	42	35	45	40	49
Always/Most of the time	36	45	53	46	39	46	21	3	5
Total	100	100	100	100	100	100	100	100	100
Bike									
Never	65	68	68	61	63	65	65	62	52
Rarely	13	15	12	13	14	14	12	17	20
Sometimes	15	13	14	17	16	15	15	19	25
Always/Most of the time	7	4	6	9	7	6	8	2	3
Total	100	100	100	100	100	100	100	100	100
Ride the bus									
Never	33	28	22	29	38	29	38	73	72
Rarely	22	18	24	26	25	23	20	14	16
Sometimes	29	27	35	29	27	30	29	10	10
Always/Most of the time	16	27	19	16	10	18	13	3	2
Total	100	100	100	100	100	100	100	100	100

* Percentage distributions are based on the weighted number of respondents to each question. The actual number of respondents for each question differs since not all questions were answered by all respondents. The minimum number of respondents for each group of students and for faculty and staff is shown below.

** Less than one-half of one percent

Number of respondents	3906	1056	805	875	735	3496	426	1055	1005
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Appendix Table C3

TRAVEL & TRANSPORTATION - OTHER

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty			
		Fresh	Soph	Junior	Senior						
<i>When you moved to your current residence, how important were each of the following reasons?</i>											
Being able to walk or bike to work/campus											
Very important	64	61	75	72	74	70	55	13			
Somewhat important	14	16	13	14	12	14	15	11			
Not that important	7	8	5	5	4	6	10	11			
Not at all important	6	3	3	3	5	3	10	24			
Didn't think about it	9	12	6	6	5	7	10	41			
Total	100	100	100	100	100	100	100	100			
Being able to walk or bike to places besides work/campus											
Very important	24	21	23	22	21	22	26	16			
Somewhat important	33	34	35	33	34	34	32	25			
Not that important	22	22	24	26	25	24	19	15			
Not at all important	9	6	7	8	10	8	11	15			
Didn't think about it	12	17	11	11	10	12	12	29			
Total	100	100	100	100	100	100	100	100			
Being able to take the bus to work/campus											
Very important	35	36	30	32	27	32	40	14			
Somewhat important	20	24	20	20	17	20	19	13			
Not that important	15	14	17	17	18	16	14	10			
Not at all important	12	8	14	14	16	13	11	24			
Didn't think about it	18	18	19	17	22	19	16	39			
Total	100	100	100	100	100	100	100	100			
Being able to take the bus to places besides work/campus											
Very important	15	21	15	13	10	15	16	7			
Somewhat important	23	30	24	20	17	23	23	12			
Not that important	24	22	24	26	23	24	25	14			
Not at all important	16	7	16	18	20	15	18	26			
Didn't think about it	22	20	21	23	30	23	18	41			
Total	100	100	100	100	100	100	100	100			

Appendix Table C3 (continued)

TRAVEL & TRANSPORTATION - OTHER

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty				
		Fresh	Soph	Junior	Senior							
<i>When you moved to your current residence, how important were each of the following reasons?</i>												
Having a lower impact on the environment												
Very important	10	11	11	9	8	9	10	14				
Somewhat important	22	26	20	20	18	21	24	30				
Not that important	21	21	17	20	19	20	23	16				
Not at all important	8	7	8	8	9	8	9	9				
Didn't think about it	39	35	44	43	46	42	35	47				
Total	100	100	100	100	100	100	100	100				
<i>To what extent do you agree or disagree with the following statements?</i>												
In general, people should use public transportation, like buses or trains, even if it is less convenient												
Strongly disagree	3	4	3	3	3	3	6	5				
Disagree	18	18	20	20	19	19	14	18				
neither agree nor disagree	34	35	35	37	36	36	31	43				
Agree	36	37	35	33	34	35	39	26				
Strongly agree	9	6	7	7	8	7	13	10				
Total	100	100	100	100	100	100	100	100				
In general, people should walk or bike to places even if it is less convenient.												
Strongly disagree	2	2	3	2	2	2	3	4				
Disagree	16	17	16	17	15	16	15	19				
neither agree nor disagree	32	30	31	30	32	31	34	40				
Agree	38	40	38	39	38	39	36	29				
Strongly agree	12	11	12	12	13	12	12	6				
Total	100	100	100	100	100	100	100	100				
In general, people should buy cars with excellent gas mileage even if they cost more or have less horsepower.												
Strongly disagree	3	3	3	4	3	3	5	3				
Disagree	14	13	14	14	13	14	13	16				
neither agree nor disagree	30	28	30	29	30	29	32	31				
Agree	39	43	40	40	39	40	38	35				
Strongly agree	14	13	13	13	15	14	14	13				
Total	100	100	100	100	100	100	100	100				

Appendix Table C3 (continued)

TRAVEL & TRANSPORTATION - OTHER

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All		
<i>Think about your answers to questions about travel and transportation. How many of your friends share your views?</i>								
All	1	1	1	1	**	1	**	2
Most	43	46	43	42	45	44	42	47
Some/few	41	36	37	44	40	39	44	33
None	1	1	1	**	**	1	1	1
Don't know	14	16	18	13	15	15	13	17
Total	100	100	100	100	100	100	100	100
<i>Which U-M parking permit do you have?</i>								
Gold							1	19
Blue							33	49
Yellow							21	3
Orange							7	3
Daily AVI or Scratch-off							4	5
Shared Carpool Permit; Color?							1	**
No permit							33	21
Total							100	100
<i>What is the primary reason you drive a car to work?***</i>								
Convenience							30	34
Work schedule							15	17
Home/family schedule							15	19
Length of commute							34	21
Other							7	9
Total							100	100

* Percentage distributions are based on the weighted number of respondents to each question. The actual number of respondents for each question differs since not all questions were answered by all respondents. The minimum number of respondents for each group of students and for faculty and staff is shown below.

** Less than one-half of one percent

*** Question was only asked of staff and faculty who said they most often drove a car to and from home to the work place. Consequently, the number of staff and faculty responding is 836 and 799 respectively.

Appendix Table C4

WASTE PREVENTION & CONSERVATION - AWARENESS

(percentage distribution)*

2012	All Students	Undergraduate Students					Graduate Students	Staff	Faculty				
		Fresh	Soph	Junior	Senior	All							
<i>How much do you know about:</i>													
Recycling glass													
A lot	15	11	14	14	18	14	16	17	21				
A fair amount	31	29	26	31	34	30	32	32	33				
A little	33	32	34	35	33	34	33	32	30				
Not much//nothing	21	28	26	20	15	22	19	19	16				
Total	100	100	100	100	100	100	100	100	100				
Recycling plastic													
A lot	19	19	19	22	22	20	17	20	22				
A fair amount	37	41	36	36	40	39	35	37	35				
A little	31	28	33	31	29	30	33	30	30				
Not much//nothing	13	12	12	11	9	11	15	13	13				
Total	100	100	100	100	100	100	100	100	100				
Recycling paper													
A lot	24	24	26	27	26	26	22	32	32				
A fair amount	38	41	39	36	40	39	36	41	38				
A little	28	27	27	28	27	27	30	21	25				
Not much//nothing	10	8	8	9	7	8	12	6	5				
Total	100	100	100	100	100	100	100	100	100				
Recycling electronic waste													
A lot	5	4	5	4	6	5	5	12	12				
A fair amount	12	13	12	12	13	12	10	23	22				
A little	31	28	30	34	34	32	31	31	34				
Not much//nothing	52	55	53	50	47	51	54	34	32				
Total	100	100	100	100	100	100	100	100	100				
Property Disposition services													
A lot	5	3	3	4	7	4	5	17	13				
A fair amount	9	7	6	10	11	9	11	25	27				
A little	20	18	20	22	20	20	20	28	29				
Not much//nothing	66	72	71	64	62	67	64	30	31				
Total	100	100	100	100	100	100	100	100	100				

* Percentage distributions are based on the weighted number of respondents to each question. The actual number of respondents for each question differs since not all questions were answered by all respondents. The minimum number of respondents for each group of students and for faculty and staff is shown below.

Number of respondents	4008	1074	824	903	753	3554	446	1068	1078
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Appendix Table C5

WASTE PREVENTION & CONSERVATION - BEHAVIOR

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty	
		Fresh	Soph	Junior	Senior	All			
<i>During the past year, how often did you do the following?#</i>									
Set the thermostat to 65 degrees or lower during cool or cold weather									
Never	19	20	20	20	16	19	18	12	13
Rarely	18	16	16	19	21	18	17	13	13
Sometimes	23	18	20	25	25	22	26	30	33
Always//Most of the time	23	15	19	21	26	20	28	42	39
Not applicable	17	31	25	15	12	21	11	3	2
Total	100	100	100	100	100	100	100	100	100
Set thermostat (a/c) to 78 degrees or higher during warm or hot weather									
Never	24	26	29	27	24	26	20	14	16
Rarely	17	16	18	18	20	18	15	14	12
Sometimes	20	14	17	22	20	18	22	27	25
Always//Most of the time	17	11	10	13	16	13	26	35	40
Not applicable	22	33	26	20	20	25	17	10	7
Total	100	100	100	100	100	100	100	100	100
Turn off lights when I leave the room									
Never	**	1	1	1	**	**	0	**	0
Rarely	1	1	1	1	1	1	1	1	1
Sometimes	8	7	8	5	6	7	10	9	9
Always//Most of the time	90	90	90	92	92	91	88	90	90
Not applicable	1	1	*	1	1	1	1	**	0
Total	100	100	100	100	100	100	100	100	100
Unplug electrical appliances when not using them									
Never	12	12	12	11	11	11	12	15	20
Rarely	28	31	27	30	29	29	24	24	26
Sometimes	36	37	38	37	38	38	34	35	32
Always//Most of the time	23	19	22	21	21	21	29	25	21
Not applicable	1	1	1	1	1	1	1	1	1
Total	100	100	100	100	100	100	100	100	100
Use the power saving settings on my computer									
Never	7	7	9	6	8	7	6	8	5
Rarely	14	16	16	16	13	15	11	6	8
Sometimes	30	31	29	31	28	30	31	19	18
Always//Most of the time	48	45	45	46	50	47	50	60	67
Not applicable	1	1	1	1	1	1	2	7	2
Total	100	100	100	100	100	100	100	100	100

Appendix Table C5 (continued)

WASTE PREVENTION & CONSERVATION - BEHAVIOR
(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty
		Fresh	Soph.	Junior	Senior			
<i>During the past year, how often did you do the following?</i>								
Turn off my computer when not using it**								
Never	9	9	11	10	12	10	7	7
Rarely	23	22	26	22	25	24	22	14
Sometimes	28	27	27	29	25	27	28	22
Always//Most of the time	39	41	35	38	37	38	41	54
Not applicable	1	1	1	1	1	1	2	3
Total	100	100	100	100	100	100	100	100
Use a motion sensor power strip								
Never	73	73	71	74	75	73	73	77
Rarely	7	7	6	7	7	7	8	5
Sometimes	5	5	5	4	5	5	4	4
Always//Most of the time	3	4	5	4	5	4	2	5
Not applicable	12	11	13	11	9	11	13	9
Total	100	100	100	100	100	100	100	100
Print double-sided								
Never	5	12	7	5	3	7	3	
Rarely	8	15	8	8	7	9	5	
Sometimes	22	27	26	21	22	24	19	
Always//Most of the time	64	45	58	66	68	59	72	
Not applicable	1	1	1	**	**	1	1	
Total	100	100	100	100	100	100	100	
Run washer only when I have a full load of clothes								
Never	1	2	1	2	1	2	1	1
Rarely	2	3	2	1	2	2	2	1
Sometimes	11	10	10	10	10	10	13	10
Always//Most of the time	83	80	84	85	85	83	81	85
Not applicable	3	5	3	2	2	3	3	2
Total	100	100	100	100	100	100	100	100
Limit time in the shower								
Never	9	9	8	8	8	9	9	7
Rarely	21	24	21	21	23	22	19	14
Sometimes	42	44	46	42	41	43	39	35
Always//Most of the time	28	22	24	28	28	26	32	44
Not applicable	**	1	1	1	**	**	1	1
Total	100	100	100	100	100	100	100	100

Question asked with reference to
the workplace (see below)

Appendix Table C5 (continued)

WASTE PREVENTION & CONSERVATION - BEHAVIOR
(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty			
		Fresh	Soph	Junior	Senior						
<i>During the past year, how often did you do the following?</i>											
Recycle bottles, containers, and paper products											
Never	1	1	1	2	1	1	3	1			
Rarely	6	5	4	5	5	7	4	1			
Sometimes	23	24	26	26	25	25	13	4			
Always//Most of the time	70	69	68	67	69	68	79	94			
Not applicable	**	1	1	**	**	1	**	**			
Total	100	100	100	100	100	100	100	100			
Use a reusable water bottle, coffee mug, etc.											
Never	2	1	3	3	3	2	2	2			
Rarely	7	6	8	8	8	6	2	2			
Sometimes	24	26	26	27	28	27	14	12			
Always//Most of the time	66	66	62	61	60	62	81	83			
Not applicable	1	1	1	1	1	1	1	1			
Total	100	100	100	100	100	100	100	100			
Recycle electronic waste											
Never	23	28	25	25	25	18	10	4			
Rarely	21	22	19	25	23	18	10	8			
Sometimes	17	15	16	15	19	16	18	20			
Always//Most of the time	15	12	12	13	12	12	52	60			
Not applicable	24	23	28	22	21	23	8	8			
Total	100	100	100	100	100	100	100	100			
Bring reusable bags to the store											
Never	31	31	36	41	39	36	23	11			
Rarely	20	21	19	23	20	21	18	12			
Sometimes	24	21	22	20	23	22	28	36			
Always//Most of the time	21	17	12	13	17	15	30	41			
Not applicable	4	10	11	3	1	6	1	**			
Total	100	100	100	100	100	100	100	100			
Shop for things with minimal packaging											
Never	30	35	33	37	34	35	23	13			
Rarely	28	29	29	27	31	29	25	20			
Sometimes	29	25	24	24	26	25	37	45			
Always//Most of the time	8	5	6	7	4	5	11	14			
Not applicable	5	6	8	5	5	6	4	2			
Total	100	100	100	100	100	100	100	100			

Appendix Table C5 (continued)

WASTE PREVENTION & CONSERVATION - BEHAVIOR
(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty			
		Fresh	Soph	Junior	Senior						
<i>During the past year, how often did you do the following?</i>											
Use U-M Property Disposition Services to obtain items											
Never	69	67	71	71	73	70	66				
Rarely	10	10	9	9	11	10	10				
Sometimes	8	5	5	7	8	6	11				
Always//Most of the time	2	2	2	1	1	2	3				
Not applicable	11	16	13	10	7	12	10				
Total	100	100	100	100	100	100	100				
Shop in a second-hand store or online site such as eBay when I have to buy something											
Never	22	23	24	21	20	22	20	23			
Rarely	22	23	22	22	23	22	21	28			
Sometimes	43	41	40	44	44	43	43	39			
Always//Most of the time	11	9	10	10	11	10	14	9			
Not applicable	2	4	4	3	2	3	2	1			
Total	100	100	100	100	100	100	100	100			
Compost food scraps											
Never	60	58	60	62	64	61	58	49			
Rarely	16	16	14	14	17	16	17	14			
Sometimes	12	12	13	12	12	12	13	16			
Always//Most of the time	6	6	5	5	4	5	8	19			
Not applicable	6	8	8	7	3	6	4	2			
Total	100	100	100	100	100	100	100	100			
Buy products (besides food) that carry some type of eco-label or certification											
Never	22	24	26	26	25	25	17	13			
Rarely	29	28	28	28	31	29	29	22			
Sometimes	40	39	36	38	37	38	45	52			
Always//Most of the time	6	4	5	5	6	5	7	12			
Not applicable	3	5	5	3	1	3	1	1			
Total	100	100	100	100	100	100	100	100			

Question asked with reference to the workplace (see below)

Appendix Table C5 (continued)

WASTE PREVENTION & CONSERVATION - BEHAVIOR
(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All		
<i>During the past year, how often did you do the following <u>at work</u> when you had the opportunity?</i>								
Turn off the lights when I leave the room								
Never						2	**	
Rarely						3	1	
Sometimes						20	12	
Always//Most of the time						71	85	
Not applicable						4	2	
Total						100	100	
Use the power saving settings on the computer								
Never						9	5	
Rarely						8	9	
Sometimes						18	16	
Always//Most of the time						58	67	
Not applicable						7	3	
Total						100	100	
Turn off my computer when I leave work								
Never						16	15	
Rarely						10	13	
Sometimes						11	14	
Always//Most of the time						51	52	
Not applicable						12	6	
Total						100	100	
Use a motion sensor power strip								
Never						51	58	
Rarely						5	6	
Sometimes						5	5	
Always//Most of the time						16	18	
Not applicable						23	13	
Total						100	100	
Print double-sided								
Never						12	9	
Rarely						11	15	
Sometimes						31	29	
Always//Most of the time						38	45	
Not applicable						8	2	
Total						100	100	

Appendix Table C5 (continued)

WASTE PREVENTION & CONSERVATION - BEHAVIOR
(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All		
<i>During the past year, how often did you do the following <u>at work</u> when you had the opportunity?</i>								
Recycle bottles, containers, and paper products								
Never						1	1	
Rarely						2	1	
Sometimes						13	7	
Always//Most of the time						83	91	
Not applicable						1	0	
Total						100	100	
Use a reusable water bottle, coffee cup, travel mug, etc.								
Never						2	3	
Rarely						5	5	
Sometimes						19	21	
Always//Most of the time						73	69	
Not applicable						1	2	
Total						100	100	
Use U-M Property Disposition Services to obtain items such as computers, furniture, and equipment								
Never						39	35	
Rarely						14	19	
Sometimes						17	20	
Always//Most of the time						11	11	
Not applicable						19	15	
Total						100	100	

* Percentage distributions are based on the weighted number of respondents to each question. The actual number of respondents (unweighted) for each question differs since not all questions were answered by all respondents. The minimum number of respondents for each group of students and for faculty and staff is shown below.

#Student questionnaire did not specify at home.

** Less than one-half of one percent

For Faculty and staff, the item was: "Turn off my home computer when not using it."

Number of respondents	3990	1068	821	896	750	3540	446	1057	1070
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Appendix Table C6

WASTE PREVENTION & CONSERVATION - OTHER

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All		
<i>Do you have any of the following at your current residence?</i>								
Recycling bins								
Yes	91	98	92	88	91	92	90	84
No	7	1	5	10	8	6	8	16
Don't know	2	1	3	2	1	2	2	**
Total	100	100	100	100	100	100	100	100
Compost bin								
Yes	18	14	15	18	17	16	21	29
No	66	56	63	69	75	66	68	69
Don't know	16	30	22	13	8	18	11	2
Total	100	100	100	100	100	100	100	100
Programmable thermostat								
Yes	49	27	52	55	52	46	54	73
No	41	54	35	35	41	42	41	25
Don't know	10	19	13	10	7	12	5	2
Total	100	100	100	100	100	100	100	100
Water-saving items (e.g. low-flow faucets)								
Yes	30	28	29	27	24	27	35	62
No	44	31	34	46	50	40	49	31
Don't know	26	41	37	27	26	33	16	7
Total	100	100	100	100	100	100	100	100
Energy Star appliances								
Yes	30	20	25	27	29	25	37	75
No	34	27	31	37	38	33	37	17
Don't know	36	53	44	36	33	42	26	8
Total	100	100	100	100	100	100	100	100
Motion sensor for shutting off electronics								
Yes	10	14	18	9	7	12	7	9
No	80	68	69	83	87	77	86	89
Don't know	10	18	13	8	6	11	7	2
Total	100	100	100	100	100	100	100	100
Compact fluorescent light bulbs or LED light bulbs								
Yes	55	41	50	52	57	50	65	83
No	26	24	24	30	28	26	25	15
Don't know	19	35	26	18	15	24	10	2
Total	100	100	100	100	100	100	100	100

Appendix Table C6 (continued)

WASTE PREVENTION & CONSERVATION - OTHER

(percentage distribution)*

2012

	All Students	Undergraduate Students				Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior			

*Do you have any of the following at your current residence?**Renewable energy systems, like solar or geothermal*

Yes	3	3	3	2	3	3	3	4
No	73	51	61	78	81	68	82	93
Don't know	24	46	36	20	16	29	15	3
Total	100	100	100	100	100	100	100	100

*To what extent do you agree or disagree with the following statements?**In general, people should recycle even if it**Is Inconvenient*

Strongly disagree	1	1	1	1	1	1	**	1
Disagree	2	1	2	1	2	1	2	2
Neither agree nor disagree	7	7	6	7	7	7	8	5
Agree	47	48	48	48	48	48	45	50
Strongly agree	43	43	43	43	42	43	45	41
Total	100	100	100	100	100	100	100	100

In general, people should conserve water & electricity even if it is inconvenient

Strongly disagree	1	1	1	1	1	1	1	1
Disagree	4	4	4	3	4	4	5	2
Neither agree nor disagree	13	13	13	15	12	13	13	6
Agree	56	55	58	59	60	58	51	47
Strongly agree	26	27	24	22	23	24	30	44
Total	100	100	100	100	100	100	100	100

In general, people should conserve electricity even if it is inconvenient

Strongly disagree	1	1	1	1	1	1	1	1
Disagree	4	4	4	3	4	4	5	2
Neither agree nor disagree	13	13	13	15	12	13	13	6
Agree	56	55	58	59	60	58	51	47
Strongly agree	26	27	24	22	23	24	30	44
Total	100	100	100	100	100	100	100	100

In general, people should conserve water even if it is inconvenient

Strongly disagree	1	1	1	1	1	1	1	1
Disagree	4	4	4	3	4	4	5	2
Neither agree nor disagree	13	13	13	15	12	13	13	6
Agree	56	55	58	59	60	58	51	46
Strongly agree	26	27	24	22	23	24	30	41
Total	100	100	100	100	100	100	100	100

Appendix Table C6 (continued)

WASTE PREVENTION & CONSERVATION - OTHER
(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty			
		Fresh	Soph	Junior	Senior						
<i>To what extent do you agree or disagree with the following statements?</i>											
<i>In general, people should reuse things even when it is inconvenient</i>											
Strongly disagree	1	**	1	1	1	1	1	**			
Disagree	4	3	3	5	4	4	3	3			
Neither agree nor disagree	15	16	16	18	14	16	14	15			
Agree	52	53	55	50	57	53	53	49			
Strongly agree	28	28	25	26	24	26	23	33			
Total	100	100	100	100	100	100	100	100			
<i>In general, people should buy fewer things, even when it is inconvenient</i>											
Strongly disagree	2	1	3	2	2	2	2				
Disagree	11	11	12	11	10	11	10				
Neither agree nor disagree	28	31	29	30	28	30	26				
Agree	37	39	37	39	39	38	36				
Strongly agree	22	18	19	18	21	19	26				
Total	100	100	100	100	100	100	100				
<i>In general, people should buy environmentally-friendly products even if they are more expensive</i>											
Strongly disagree	3	2	3	3	2	3	4	2			
Disagree	14	16	14	17	17	16	12	10			
Neither agree nor disagree	36	33	37	34	38	35	41	31			
Agree	36	38	36	37	34	36	31	42			
Strongly agree	11	11	10	9	9	10	12	15			
Total	100	100	100	100	100	100	100	100			
<i>Think about your answers to questions about reducing, re-using, and recycling. How many of your friends share your views?</i>											
All	1	1	2	1	1	1	1	2			
Most	39	39	38	38	37	38	40	54			
Some/few	45	41	42	47	47	44	46	30			
None	1	1	0	0	1	1	0	0			
Don't know	14	18	18	14	14	16	12	14			
Total	100	100	100	100	100	100	100	100			

* Percentage distributions are based on the weighted number of respondents to each question. The actual number of respondents for each question differs since not all questions were answered by all respondents. The minimum number of respondents for each group of students and for faculty and staff is shown below.

** Less than one-half of one percent

Number of respondents	3998	1073	823	902	752	3550	447	1068	1075
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Appendix Table C7

NATURAL ENVIRONMENT - AWARENESS

(percentage distribution)*

2012	All Students	Undergraduate Students					Graduate Students	Staff	Faculty				
		Fresh	Soph	Junior	Senior	All							
<i>How much do you know about:</i>													
Disposing of hazardous waste materials (i.e. engine oil, medications, etc.)													
A lot	7	5	5	5	6	5	9	14	13				
A fair amount	19	16	17	19	17	17	23	35	38				
A little	34	31	35	33	36	34	34	36	36				
Not much/nothing	40	48	43	43	41	44	34	15	13				
Total	100	100	100	100	100	100	100	100	100				
Recognizing invasive plant species													
A lot	4	4	4	4	4	4	3	6	7				
A fair amount	11	13	13	11	11	12	10	13	16				
A little	27	26	27	29	27	27	27	31	38				
Not much/nothing	58	57	56	56	58	57	60	50	39				
Total	100	100	100	100	100	100	100	100	100				
Taking care of residential property in an environmentally-friendly way													
A lot	6	7	6	7	5	6	6	10	11				
A fair amount	24	28	27	23	21	25	23	31	33				
A little	38	39	37	40	40	39	35	39	40				
Not much/nothing	32	26	30	30	34	30	36	20	16				
Total	100	100	100	100	100	100	100	100	100				
Protecting rivers, streams, & lakes - tributaries, habitat quality, & native species													
A lot	8	10	9	8	7	8	8	12	13				
A fair amount	24	25	25	25	21	24	23	30	30				
A little	40	41	38	38	42	40	41	39	41				
Not much/nothing	28	24	28	29	30	28	28	19	16				
Total	100	100	100	100	100	100	100	100	100				

* Percentage distributions are based on the weighted number of respondents to each question. The actual number of respondents for each question differs since not all questions were answered by all respondents. The minimum number of respondents for each group of students and for faculty and staff is shown below.

Number of respondents	4010	1075	825	903	753	3559	446	1071	1080
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Appendix Table C8

NATURAL ENVIRONMENT - BEHAVIOR

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty			
		Fresh	Soph	Junior	Senior						
<i>During the past year at your current residence, how often did you:**</i>											
Use fertilizer on your lawn											
Regularly	2	11	2	1	1	2	10	11			
Sometimes	4	3	5	4	3	4	20	21			
Rarely	4	6	6	5	3	4	17	20			
Never	33	35	37	38	42	39	33	35			
Not applicable	57	45	50	52	51	51	20	13			
Total	100	100	100	100	100	100	100	100			
Use commercial herbicides or pesticides											
Regularly	1	0	2	**	1	1	4	6			
Sometimes	2	6	3	3	2	2	16	17			
Rarely	5	6	5	6	4	5	22	27			
Never	36	45	41	40	42	41	31	38			
Not applicable	56	43	49	51	51	51	19	12			
Total	100	100	100	100	100	100	100	100			
Water your lawn											
Regularly	4	15	5	2	2	3	13	22			
Sometimes	6	14	8	6	6	6	22	25			
Rarely	5	5	7	6	5	6	21	21			
Never	29	25	31	35	37	35	24	20			
Not applicable	56	41	49	51	50	50	18	12			
Total	100	100	100	100	100	100	100	100			
<i>At your current residence, have you:**</i>											
Installed a rain barrel											
Yes	2	0	3	2	1	1	9	11			
No	53	64	59	57	60	59	73	75			
Not applicable	45	36	38	41	39	40	51	14			
Total	100	100	100	100	100	100	100	100			
Installed a rain garden											
Yes	1	6	3	1	1	1	3	5			
No	53	59	59	57	59	59	79	81			
Not applicable	46	35	38	42	40	40	52	14			
Total	100	100	100	100	100	100	100	100			
Eliminated invasive species from your yard or garden											
Yes	6	9	9	5	4	5	29	37			
No	43	49	48	47	50	48	38	46			
Not applicable	51	42	43	48	46	47	56	17			
Total	100	100	100	100	100	100	100	100			

Appendix Table C8 (continued)

NATURAL ENVIRONMENT - BEHAVIOR
(percentage distribution)*

2012	All Students	Undergraduate Students					Graduate Students	Staff	Faculty				
		Fresh	Soph	Junior	Senior	All							
<i>At your current residence, have you:**</i>													
Intentionally planted native species in your lawn or garden													
Yes	5	4	4	4	3	3	6	24	36				
No	44	57	51	50	51	51	39	55	48				
Not applicable	51	39	45	46	46	46	55	21	16				
Total	100	100	100	100	100	100	100	100	100				
Converted all/part of lawn to native/natural plantings													
Yes	4	6	3	4	2	3	5	14	20				
No	45	52	53	49	51	51	39	65	65				
Not applicable	51	42	44	47	47	46	56	21	15				
Total	100	100	100	100	100	100	100	100	100				
Disposed of hazardous materials by taking them to a designated disposal facility													
Yes	12	2	12	9	10	10	14	57	60				
No	40	52	44	44	44	44	37	24	21				
Not applicable	48	46	44	47	46	46	49	19	19				
Total	100	100	100	100	100	100	100	100	100				

* Percentage distributions are based on the weighted number of respondents to each question.

** Questions were not asked of students living in residence halls or Northwood community apartments resulting in smaller numbers of respondents for freshmen and other undergraduate students. The actual number of respondents (unweighted) for each question differs since not all questions were answered by all respondents. The minimum number of respondents for each group of students and for faculty and staff is shown below.

Number of respondents	2267	36	366	765	692	1861	406	1065	1074
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Appendix Table C9

NATURAL ENVIRONMENT - OTHER

(percentage distribution)*

2012	All Students	Undergraduate Students					Graduate Students	Staff	Faculty				
		Fresh	Soph	Junior	Senior	All							
<i>To what extent do you agree or disagree with the following:</i>													
<i>Living close to parks and recreational areas is important to my quality of life.</i>													
Strongly disagree	2	1	2	2	3	2	2	3	1				
Disagree	7	8	12	9	8	9	5	4	2				
Neither agree nor disagree	25	26	28	30	28	28	19	22	11				
Agree	45	47	44	43	42	44	46	43	42				
Strongly agree	21	18	14	16	19	17	28	28	44				
Total	100	100	100	100	100	100	100	100	100				
<i>In general, people should support protecting open space & farmland near where they live.</i>													
Strongly disagree	1	**	1	**	1	1	1	2	1				
Disagree	1	2	2	1	1	1	1	**	1				
Neither agree nor disagree	19	21	20	21	23	21	16	13	6				
Agree	56	56	57	56	55	56	56	54	46				
Strongly agree	23	21	20	22	20	21	26	31	46				
Total	100	100	100	100	100	100	100	100	100				
<i>Think about your answers to questions about the natural environment. How many of your friends share your views?</i>													
All	2	2	2	1	2	2	2	3	3				
Most	38	35	34	35	37	35	42	45	53				
Some/few	38	38	36	40	40	39	39	36	28				
None	1	1	1	1	1	1	1	**	**				
Don't know	21	24	27	23	20	23	16	16	16				
Total	100	100	100	100	100	100	100	100	100				

* Percentage distributions are based on the weighted number of respondents to each question. The actual number of respondents for each question differs since not all questions were answered by all respondents. The minimum number of respondents for each group of students and for faculty and staff is shown below.

** Less than one-half of one percent

Number of respondents	4011	1076	825	904	753	3558	447	1071	1081
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Appendix Table C10

FOOD - AWARENESS

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty				
		Fresh	Soph	Junior	Senior							
How much do you know about:												
Locally grown or processed food												
A lot	14	9	14	12	15	13	16	18				
A fair amount	34	34	32	34	30	32	36	41				
A little	38	38	39	38	43	39	37	35				
Not much/nothing	14	19	15	16	12	16	11	6				
Total	100	100	100	100	100	100	100	100				
Organic food												
A lot	17	13	17	14	19	16	19	17				
A fair amount	39	39	36	37	34	36	42	41				
A little	34	34	36	36	38	36	31	36				
Not much/nothing	10	14	11	13	9	12	8	6				
Total	100	100	100	100	100	100	100	100				
Fair trade food												
A lot	10	5	9	9	10	8	12	9				
A fair amount	26	21	22	23	25	23	32	26				
A little	34	32	35	34	38	35	33	32				
Not much/nothing	30	42	34	34	27	34	24	33				
Total	100	100	100	100	100	100	100	100				
Food from humanely-treated animals												
A lot	11	9	13	9	13	11	12	11				
A fair amount	27	24	23	29	25	25	32	31				
A little	38	38	38	36	38	38	37	38				
Not much/nothing	24	29	26	26	24	26	19	20				
Total	100	100	100	100	100	100	100	100				
Food from animals that were not given hormones or antibiotics												
A lot	14	10	14	11	14	12	16	15				
A fair amount	31	29	28	29	28	29	35	34				
A little	35	37	35	38	37	37	33	38				
Not much/nothing	20	24	23	22	21	22	16	13				
Total	100	100	100	100	100	100	100	100				
Grass-fed beef												
A lot	11	8	12	11	12	11	12	14				
A fair amount	26	23	21	25	23	23	32	32				
A little	35	35	36	33	36	35	34	37				
Not much/nothing	28	34	31	31	29	31	22	17				
Total	100	100	100	100	100	100	100	100				
Fish from sustainable fisheries												
A lot	9	7	9	7	9	8	9	10				
A fair amount	22	19	18	19	19	19	28	24				
A little	35	34	37	34	36	35	34	37				
Not much/nothing	34	40	36	40	36	38	29	29				
Total	100	100	100	100	100	100	100	100				

* Percentage distributions are based on the weighted number of respondents to each question. The actual number of respondents for each question differs since not all questions were answered by all respondents. The minimum number of respondents for each group of students and for faculty and staff is shown below.

Number of respondents 4002 1072 824 901 752 3553 445 1069 1076

Appendix Table C11

FOOD - BEHAVIOR

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All		
<i>Where do you eat most of your meals (since the beginning of the semester)?</i>								
At home	63	8	43	78	81	52	83	
In campus dining facilities	31	91	54	15	11	43	9	
Elsewhere	6	1	3	7	8	5	8	
Total	100	100	100	100	100	100	100	
Number of respondents	4912	1977	827	906	154	3564	448	
<i>During the past year, about how often did you (or other household members) buy the following:***</i>								
Locally grown or processed food								
Always/Most of the time	14	15	13	10	11	11	16	18
Sometimes	52	42	49	46	50	48	57	65
Rarely	17	16	18	18	19	18	15	10
Never	4	3	3	7	4	5	3	2
Don't Know	13	24	17	19	16	18	9	5
I don't eat this	**	0	**	**	**	**	**	0
Total	100	100	100	100	100	100	100	100
Organic Food								
Always/Most of the time	16	18	20	12	16	16	16	13
Sometimes	49	37	42	45	45	44	55	53
Rarely	20	17	18	22	22	21	19	24
Never	7	10	6	9	7	7	6	7
Don't Know	8	18	14	12	10	12	4	3
I don't eat this	**	0	0	**	0	**	**	0
Total	100	100	100	100	100	100	100	100
Fair trade food								
Always/Most of the time	6	9	4	6	7	6	6	5
Sometimes	33	16	27	25	30	27	39	30
Rarely	23	12	18	21	21	20	27	19
Never	10	10	11	12	11	11	9	14
Don't Know	28	52	40	36	31	36	19	32
I don't eat this	0	1	0	0	0	0	0	0
Total	100	100	100	100	100	100	100	100
Food from humanely-treated animals								
Always/Most of the time	11	16	8	7	8	8	14	9
Sometimes	25	16	28	24	22	23	26	36
Rarely	19	16	15	18	18	17	20	12
Never	8	7	5	10	10	9	8	4
Don't Know	31	40	38	36	35	37	26	31
I don't eat this	6	5	6	5	7	6	6	4
Total	100	100	100	100	100	100	100	100

Appendix Table C11 (continued)

FOOD - BEHAVIOR

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty			
		Fresh	Soph	Junior	Senior						
Food from animals that were not given											
hormones or antibiotics											
Always/Most of the time	15	16	15	10	11	12	20	16			
Sometimes	28	22	27	26	26	26	29	38			
Rarely	16	7	13	15	16	15	16	13			
Never	7	11	6	9	9	8	6	3			
Don't Know	28	36	33	35	32	33	22	24			
I don't eat this	6	8	6	5	6	6	7	3			
Total	100	100	100	100	100	100	100	100			
Grass-fed beef											
Always/Most of the time	7	9	8	5	5	6	8	9			
Sometimes	20	11	17	17	19	18	22	29			
Rarely	17	10	17	16	17	16	18	17			
Never	12	12	9	14	14	13	12	8			
Don't Know	30	45	37	36	32	35	24	27			
I don't eat this	14	13	12	12	13	12	16	10			
Total	100	100	100	100	100	100	100	100			
Fish from sustainable fisheries											
Always/Most of the time	7	11	5	3	5	5	8	7			
Sometimes	17	9	15	15	14	14	21	23			
Rarely	15	12	15	14	16	15	15	13			
Never	13	11	11	15	14	14	13	12			
Don't Know	32	45	37	37	34	36	28	34			
I don't eat this	16	12	17	16	17	16	15	11			
Total	100	100	100	100	100	100	100	100			
<i>During the past year, about how much of your grocery purchases were sustainable food?***</i>											
All/most	6	5	6	4	5	5	6	5			
More than half	15	17	13	12	10	11	19	14			
Half	16	13	18	14	18	16	16	17			
Less than half	36	25	33	37	39	37	35	36			
None	4	3	3	5	4	4	4	3			
I don't know	23	37	27	28	24	27	20	25			
Total	100	100	100	100	100	100	100	100			

***Questions were not asked of students who said they ate most of their meals in campus dining facilities resulting in smaller respondent numbers for freshmen and other undergraduate students. The actual number of respondents (unweighted) for each question differs since not all questions were answered by all respondents. The minimum number of respondents for each group of students and for faculty and staff is shown below.

Number of respondents	2303	103	379	766	661	1904	403	1058	1072
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Appendix Table C11 (continued)

FOOD - BEHAVIOR

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior			
<i>During the past week, how often have you included meat as part of your daily diet?</i>								
Daily/almost daily	50	63	55	52	50	55	41	31
3-4 days	23	19	21	24	22	22	26	35
1-2 days	18	11	16	16	19	15	22	23
Never	9	7	8	8	9	8	11	11
Total	100	100	100	100	100	100	100	100
<i>During the past year, have you:</i>								
<i>Grown fruits/vegetables in a home garden?</i>								
Yes	22	35	30	21	16	26	15	42
No	78	65	70	79	84	74	85	58
Total	100	100	100	100	100	100	100	100
<i>Grown fruits/vegetables in a community</i>								
Yes	4	7	4	4	3	5	3	3
No	96	93	96	96	97	95	97	97
Total	100	100	100	100	100	100	100	100
<i>Shopped at farmers markets/food stands?</i>								
Yes	62	67	61	56	60	61	64	80
No	38	33	39	44	40	39	36	16
Total	100	100	100	100	100	100	100	100
<i>Belonged to a CSA?</i>								
Yes	5	2	2	2	2	2	8	5
No	95	98	98	98	98	98	92	95
Total	100	100	100	100	100	100	100	100
<i>Visited U-Pick farms?</i>								
Yes	13	12	12	12	11	12	16	27
No	87	88	88	88	89	88	84	73
Total	100	100	100	100	100	100	100	100
<i>Raised animals for food?</i>								
Yes	3	3	4	3	2	3	1	2
No	97	97	96	97	98	97	99	98
Total	100	100	100	100	100	100	100	100

* Percentage distributions are based on the weighted number of respondents to each question. The actual number of respondents (unweighted) for each question differs since not all questions were answered by all respondents. The minimum number of respondents for each group of students and for faculty and staff is shown below.

** Less than one-half of one percent

Number of respondents	4008	1076	825	904	751	3559	448	1058	1075
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Appendix Table C12
FOOD - OTHER
(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All		
<i>To what extent do you agree or disagree with the following statement?</i>								
<i>In general, people should buy sustainable food even if it costs more or is less convenient.</i>								
Strongly disagree	3	2	5	3	3	3	3	2
Disagree	12	12	14	14	13	13	13	11
Neither agree nor disagree	41	42	39	44	44	43	51	36
Agree	36	36	34	32	32	33	27	37
Strongly agree	8	8	8	7	8	8	5	14
Total	100	100	100	100	100	100	100	100
Number of respondents	4011	1077	826	905	754	3562	449	1073
<i>In general, how do you feel about food shopping?</i>								
I enjoy food shopping	54	49	54	57	56	54	43	42
I don't like going food shopping	14	13	12	13	16	14	13	19
Indifferent	32	38	34	30	28	32	31	39
Total	100	100	100	100	100	100	100	100
Number of respondents	4007	1074	826	904	754	3558	449	1071
<i>Think about your answers to questions about food. How many of your friends share your views?</i>								
All	2	2	2	2	2	2	2	1
Most	32	31	28	32	31	31	33	38
Some/few	43	38	41	43	46	42	46	40
None	2	2	2	1	1	1	1	1
Don't know	21	27	27	21	20	24	16	20
Total	100	100	100	100	100	100	100	100
* Percentage distributions are based on the weighted number of respondents to each question. The actual number of respondents for each question differs since not all questions were answered by all respondents. The minimum number of respondents for each group of students and for faculty and staff is shown below.								
Number of respondents	4007	1074	926	904	753	3556	449	1071
<i>How important to you are the following when you buy sustainable food?**</i>								
Nutrition								
Very important	63	70	70	64	61	64	63	63
Somewhat important	31	24	27	31	33	31	27	31
Not that important	4	6	2	3	6	4	3	4
Not at all important	2	0	1	2	1	1	1	2
Total	100	100	100	100	100	100	100	100
Taste								
Very important	62	52	62	64	63	63	70	65
Somewhat important	33	42	31	30	33	33	26	31
Not that important	4	6	6	4	3	3	3	3
Not at all important	1	2	1	2	1	1	1	1
Total	100	100	100	100	100	100	100	100

Appendix Table C12 (continued)

FOOD - OTHER

(percentage distribution)*

2012	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
<i>How important to you are the following when you buy sustainable food?***</i>									
Supporting the local community									
Very important	28	37	27	25	28	27	29	47	49
Somewhat important	50	42	52	47	48	48	51	43	43
Not that important	22	21	21	27	24	25	19	8	6
Not at all important	**	0	0	1	0	0	1	2	2
Total	100	100	100	100	100	100	100	100	100
Protecting the environment									
Very important	32	38	36	28	29	30	34	44	51
Somewhat important	49	45	44	47	50	48	51	46	43
Not that important	16	14	17	22	19	19	13	9	5
Not at all important	3	3	3	3	2	3	2	1	1
Total	100	100	100	100	100	100	100	100	100
Avoiding synthetic pesticides/fertilizers, antibiotics/growth hormones									
Very important	47	56	50	41	43	44	49	60	59
Somewhat important	35	31	35	34	36	35	36	29	32
Not that important	14	12	12	21	17	17	12	9	7
Not at all important	4	1	3	4	4	4	3	2	2
Total	100	100	100	100	100	100	100	100	100

* Percentage distributions are based on the weighted number of respondents to each question. The actual number of respondents for each question differs since not all questions were answered by all respondents. The minimum number of respondents for each group of students and for faculty and staff is shown below.

** Less than one-half of one percent

*** The questions were not asked of respondents who said "none" or "I don't know" when asked how much of their grocery purchases during the past year were sustainable food.

Consequently, the number of respondents to these questions is smaller than the number of respondents to other food questions. The minimum number of respondents for each group of students and for faculty and staff is shown below.

Number of respondents	1631	61	265	509	483	1322	309	778	837
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Appendix Table C13

CLIMATE CHANGE

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior			
<i>How convinced are you that climate change is happening?</i>								
Completely convinced	48	39	46	47	48	45	52	45
Mostly convinced	35	40	33	35	35	36	33	32
Not so convinced	11	12	14	11	11	12	11	12
Not at all convinced	3	4	3	3	2	3	2	2
Don't know	3	5	4	4	4	4	2	5
Total	100	100	100	100	100	100	100	100
<i>How important is climate change to you personally?</i>								
Not at all important	3	4	4	4	3	4	2	4
Not too important	14	16	14	17	16	16	11	12
Somewhat important	39	39	41	39	43	40	36	39
Very important	30	30	27	28	24	27	34	32
Extremely important	14	11	14	12	14	13	17	13
Total	100	100	100	100	100	100	100	100
<i>How well can you explain climate change to someone?</i>								
Very well	21	20	23	19	20	20	21	12
Fairly well	44	49	44	46	42	45	43	37
A little bit	31	28	28	29	33	30	33	43
Couldn't explain it at all	4	4	5	6	5	5	3	8
Total	100	100	100	100	100	100	100	100
<i>Assuming climate change is happening, do you think it is:</i>								
Caused mostly by human activity	39	33	33	38	35	35	44	31
Caused mostly by natural causes	5	7	6	6	5	6	4	6
Caused by both	55	59	59	55	59	58	51	60
None of the above because climate change is not happening	1	1	2	1	1	1	1	3
Total	100	100	100	100	100	100	100	100
<i>How many of your friends share your views about climate change?</i>								
All	7	5	5	7	6	6	10	6
most	44	43	43	43	44	43	46	35
Some/few	31	31	32	32	31	31	29	36
None	1	1	1	1	**	1	1	**
Don't know	17	20	19	17	19	19	14	23
Total	100	100	100	100	100	100	100	100

* Percentage distributions are based on the weighted number of respondents to each question. The actual number of respondents for each question differs since not all questions were answered by all respondents. The minimum number of respondents for each group of students and for faculty and staff is shown below.

** Less than one-half of one percent

Number of respondents 4009 1074 824 903 753 3556 449 1070 1082

Appendix Table C14

SUSTAINABILITY ENGAGEMENT AT U-M & ELSEWHERE

(percentage distribution)*

2012	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
<i>Have you ever participated in any of the following at U-M?</i>									
RecycleMania									
Yes	5	2	8	7	9	6	3	7	6
No	95	98	92	93	91	94	97	93	94
Total	100	100	100	100	100	100	100	100	100
A U-M organization dealing with sustainability									
Yes	14	9	14	16	18	14	13	11	10
No	86	91	86	84	82	86	87	89	90
Total	100	100	100	100	100	100	100	100	100
Earthfest									
Yes	9	7	11	13	15	11	5	7	5
No	91	93	89	87	85	89	95	93	95
Total	100	100	100	100	100	100	100	100	100
Planet Blue Open House									
Yes	10	7	7	6	15	9	11	21	20
No	90	93	93	94	85	91	89	79	80
Total	100	100	100	100	100	100	100	100	100
Zero Waste Events									
Yes	4	2	4	4	6	4	4	2	2
No	96	98	96	96	94	96	96	98	98
Total	100	100	100	100	100	100	100	100	100
e-Waste Recycling Event									
Yes	2	2	3	3	3	3	2	15	18
No	98	98	97	97	97	97	98	85	82
Total	100	100	100	100	100	100	100	100	100
Kill-a-Watt									
Yes	14	19	30	21	12	20	3		
No	86	81	70	79	88	80	97		
Total	100	100	100	100	100	100	100		
A U-M course that addressed sustainability									
Yes	17	8	20	21	31	20	13		
No	83	92	80	79	69	80	87		
Total	100	100	100	100	100	100	100		

Appendix Table C14 (continued)

SUSTAINABILITY ENGAGEMENT AT U-M & ELSEWHERE
 (percentage distribution)*

2012	All Students	Undergraduate Students					Graduate Students	Staff	Faculty				
		Fresh	Soph	Junior	Senior	All							
<i>During the past year, have you done any of the following to promote environmental protection, energy/water conservation, etc.?</i>													
<i>Given money to an organization or advocacy group supporting one of the above issues?</i>													
Yes	18	20	15	17	16	17	19	26	53				
No	82	80	85	83	84	83	81	74	47				
Total	100	100	100	100	100	100	100	100	100				
<i>Volunteered for an organization or advocacy group supporting one of the above issues?</i>													
Yes	22	31	24	24	21	25	16	8	9				
No	78	69	76	76	79	75	84	92	91				
Total	100	100	100	100	100	100	100	100	100				
<i>Served in a leadership position for an organization or advocacy group supporting one of the above issues?</i>													
Yes	7	10	7	8	9	9	5	2	3				
No	93	90	93	92	91	91	95	98	97				
Total	100	100	100	100	100	100	100	100	100				
<i>Voted for a candidate for public office because of her/his position on any of the above issues?</i>													
Yes	31	26	33	29	30	29	34	41	56				
No	69	74	67	71	70	71	66	59	44				
Total	100	100	100	100	100	100	100	100	100				

* Percentage distributions are based on the weighted number of respondents to each question. The actual number of respondents for each question differs since not all questions were answered by all respondents. The minimum number of respondents for each group of students and for faculty and staff is shown below.

Number of respondents	3972	1066	817	899	738	3533	444	1050	1064
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Appendix Table C15

U-M SUSTAINABILITY INITIATIVES - AWARENESS & RATINGS

(percentage distribution)*

2012	All Students	Undergraduate Students					Graduate Students	Staff	Faculty				
		Fresh	Soph	Junior	Senior	All							
<i>How aware are you of UM's efforts to:</i>													
Conserve Energy													
Very aware	19	25	23	22	21	23	12	24	19				
Somewhat aware	49	50	49	51	51	50	46	47	53				
Not too aware	22	19	21	19	21	20	26	21	20				
Not at all aware	10	6	7	8	7	7	16	8	8				
Total	100	100	100	100	100	100	100	100	100				
Encourage people to take a bus or bike													
Very aware	22	30	24	24	21	25	17	26	16				
Somewhat aware	43	45	48	46	46	46	37	45	47				
Not too aware	24	19	22	22	23	21	30	21	27				
Not at all aware	11	6	6	8	10	8	16	8	10				
Total	100	100	100	100	100	100	100	100	100				
Promote ride sharing													
Very aware	13	18	16	15	14	16	10	25	16				
Somewhat aware	35	37	38	36	38	37	31	48	44				
Not too aware	35	32	34	35	34	34	35	18	28				
Not at all aware	17	13	12	14	14	13	24	9	12				
Total	100	100	100	100	100	100	100	100	100				
Promote recycling													
Very aware	37	46	43	41	41	43	28	41	37				
Somewhat aware	42	39	40	39	42	40	44	43	44				
Not too aware	15	11	13	14	12	12	18	11	13				
Not at all aware	6	4	4	6	5	5	10	5	6				
Total	100	100	100	100	100	100	100	100	100				
Promote food from sustainable sources													
Very aware	12	19	18	15	14	16	6	9	6				
Somewhat aware	32	35	39	33	36	36	26	28	22				
Not too aware	35	32	30	36	33	33	38	41	43				
Not at all aware	21	14	13	16	17	15	30	22	29				
Total	100	100	100	100	100	100	100	100	100				
Reduce greenhouse gas emissions													
Very aware	11	16	13	12	12	13	7	8	7				
Somewhat aware	33	37	36	32	36	36	28	31	29				
Not too aware	37	34	37	41	35	36	39	40	41				
Not at all aware	19	13	14	15	17	15	26	21	23				
Total	100	100	100	100	100	100	100	100	100				

Appendix Table C15
U-M SUSTAINABILITY INITIATIVES - AWARENESS & RATINGS
(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All		
<i>How aware are you of UM's efforts to:</i>								
<i>Maintain campus grounds in an environmentally-friendly manner</i>								
Very aware	15	21	17	16	17	18	11	13
Somewhat aware	34	39	40	34	37	37	28	38
Not too aware	32	28	30	35	29	31	33	30
Not at all aware	19	12	13	15	17	14	28	19
Total	100	100	100	100	100	100	100	100
<i>Protect the Huron River</i>								
Very aware	8	11	7	9	10	9	6	9
Somewhat aware	23	23	23	22	27	24	21	26
Not too aware	37	36	40	40	34	37	36	37
Not at all aware	32	30	30	29	29	30	37	28
Total	100	100	100	100	100	100	100	100
* Percentage distributions are based on the weighted number of respondents to each question. The actual number of respondents for each question differs since not all questions were answered by all respondents. The minimum number of respondents for each group of students and for faculty and staff is shown below.								
Number of respondents	3991	1072	819	900	748	3540	443	1061
<i>How would you rate UM's efforts to:***</i>								
<i>Conserve energy</i>								
(5) Very good (A)	23	32	26	24	23	26	16	18
(4) Good (B)	49	50	48	49	47	49	51	47
(3) Fair (C)	24	16	22	25	23	21	28	28
(2) Poor (D)	3	2	3	2	6	3	4	6
(1) Very poor (F)	1	**	1	**	1	1	1	1
Total	100	100	100	100	100	100	100	100
Mean Rating	3.90	4.12	3.95	3.95	3.85	3.96	3.76	3.75
<i>Encourage people to take bus/bike</i>								
(5) Very good (A)	30	43	33	30	27	33	23	15
(4) Good (B)	40	38	40	42	40	40	41	42
(3) Fair (C)	25	17	22	23	25	22	30	29
(2) Poor (D)	5	2	5	5	7	5	6	6
(1) Very poor (F)	**	**	**	**	1	**	**	1
Total	100	100	100	100	100	100	100	100
Mean Rating	3.95	4.22	3.99	3.97	3.85	3.01	3.81	3.82
<i>Promote ride sharing</i>								
(5) Very good (A)	15	19	17	15	15	17	10	21
(4) Good (B)	33	36	34	31	32	33	32	41
(3) Fair (C)	38	34	35	41	35	36	42	31
(2) Poor (D)	13	10	13	13	16	13	14	7
(1) Very poor (F)	1	1	1	**	2	1	2	**
Total	100	100	100	100	100	100	100	100
Mean Rating	3.48	3.62	3.53	3.48	3.42	3.52	3.34	3.76

Appendix Table C15

U-M SUSTAINABILITY INITIATIVES - AWARENESS & RATINGS

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All		
<i>How would you rate U-M's efforts to:***</i>								
Promote recycling								
(5) Very good (A)	43	54	48	48	46	49	32	34
(4) Good (B)	37	33	35	35	36	35	42	42
(3) Fair (C)	16	11	14	14	14	13	21	19
(2) Poor (D)	3	2	2	2	3	2	4	4
(1) Very poor (F)	1	**	1	1	1	1	1	**
Total	100	100	100	100	100	100	100	100
Mean Rating	4.18	4.39	4.27	4.27	4.23	4.29	4.00	4.04
Promote food from sustainable sources								
(5) Very good (A)	14	21	18	13	14	17	9	9
(4) Good (B)	34	37	36	33	34	35	30	29
(3) Fair (C)	38	31	33	38	36	34	46	47
(2) Poor (D)	12	10	10	14	13	12	13	14
(1) Very poor (F)	2	1	3	2	3	2	2	1
Total	100	100	100	100	100	100	100	100
Mean Rating	3.46	3.67	3.59	3.41	3.43	3.53	3.31	3.14
Reduce greenhouse gas emissions								
(5) Very good (A)	13	19	15	12	16	16	7	10
(4) Good (B)	37	40	39	37	37	38	35	31
(3) Fair (C)	40	32	34	39	36	35	49	48
(2) Poor (D)	9	8	10	11	10	10	8	10
(1) Very poor (F)	1	1	2	1	1	1	1	2
Total	100	100	100	100	100	100	100	100
Mean Rating	3.52	3.68	3.55	3.48	3.57	3.58	3.39	3.33
Maintain campus grounds in an environmentally friendly manner								
(5) Very good (A)	20	28	23	19	22	23	15	17
(4) Good (B)	44	46	41	43	42	43	45	42
(3) Fair (C)	29	22	29	31	28	27	34	36
(2) Poor (D)	6	4	6	6	7	6	6	4
(1) Very poor (F)	1	**	1	1	1	1	**	1
Total	100	100	100	100	100	100	100	100
Mean Rating	3.76	3.98	3.79	3.73	3.77	3.81	3.69	3.70
Protect the Huron River								
(5) Very good (A)	12	16	11	12	12	13	10	12
(4) Good (B)	36	40	39	35	37	38	34	36
(3) Fair (C)	41	33	35	42	39	37	49	45
(2) Poor (D)	9	9	13	10	10	10	5	6
(1) Very poor (F)	2	2	2	1	2	2	1	1
Total	100	100	100	100	100	100	100	100
Mean Rating	3.47	3.59	3.44	3.47	3.47	3.50	3.45	3.52

* Percentage distributions are based on the weighted number of respondents to each question. The actual number of respondents for each question differs since not all questions were answered by all respondents. The minimum number of respondents for each group of students and for faculty and staff is shown below.

** Less than one-half of one percent

*** Questions were not asked of respondents who said they were "not at all aware" of each corresponding U-M initiative. Consequently, the number of respondents rating each initiative is smaller than those reporting their level of awareness. The actual number of respondents for each question differs since not all questions were answered by all respondents.
The minimum number of respondents for each group of students and for faculty and staff is shown below.

Number of respondents	2716	732	567	624	518	2441	273	701	629
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Appendix Table C16

OTHER BEHAVIORS & OPINIONS ABOUT SUSTAINABILITY

(percentage distribution)*

2012	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
<i>During the past year, how often have you encouraged your friends to do the following things?</i>									
Walk, bike, or take the bus rather than drive									
Never	23	22	21	21	24	22	24	42	48
Rarely	18	17	15	17	17	17	20	19	17
Sometimes	34	33	35	33	35	34	34	28	26
Frequently	23	25	25	26	21	24	21	8	7
Don't know	2	3	4	3	3	3	1	3	2
Total	100	100	100	100	100	100	100	100	100
Buy locally sourced or sustainable food									
Never	36	37	38	37	38	38	34	37	43
Rarely	23	22	20	23	24	22	25	18	16
Sometimes	25	26	24	24	23	24	26	29	27
Frequently	12	10	12	11	11	11	13	13	12
Don't know	4	5	6	5	4	5	2	3	2
Total	100	100	100	100	100	100	100	100	100
Conserve water									
Never	24	19	20	20	21	20	30	33	47
Rarely	19	17	17	17	20	18	20	20	19
Sometimes	33	33	35	37	34	34	31	28	20
Frequently	22	28	25	24	24	26	17	16	12
Don't know	2	3	3	2	1	2	2	3	2
Total	100	100	100	100	100	100	100	100	100
Conserve electricity									
Never	18	15	14	13	13	14	26	28	43
Rarely	15	14	13	11	15	13	17	17	17
Sometimes	33	35	33	36	32	34	31	29	23
Frequently	32	34	37	38	38	37	24	23	15
Don't know	2	2	3	2	2	2	2	3	2
Total	100	100	100	100	100	100	100	100	100
Reuse or recycle containers or bags									
Never	20	15	17	16	19	17	24	26	40
Rarely	15	13	12	14	15	14	16	14	15
Sometimes	31	31	32	31	29	31	31	29	24
Frequently	33	38	36	36	35	36	28	28	19
Don't know	2	3	3	3	2	2	1	3	2
Total	100	100	100	100	100	100	100	100	100

Appendix Table C16 (continued)

OTHER BEHAVIORS & OPINIONS ABOUT SUSTAINABILITY

(percentage distribution)*

2012	All Students	Undergraduate Students				All	Graduate Students	Staff	Faculty				
		Fresh	Soph	Junior	Senior								
<i>During the past year, how often have you encouraged your friends to do the following things?</i>													
Buy fewer things													
Never	34	29	32	31	36	32	38	35	49				
Rarely	25	27	26	26	27	27	22	18	18				
Sometimes	25	27	26	27	22	26	25	27	21				
Frequently	13	13	12	13	12	13	13	14	10				
Don't know	3	4	4	3	3	3	2	3	2				
Total	100	100	100	100	100	100	100	100	100				
Buy things that are better for the environment													
Never	31	27	29	30	33	30	34	34	46				
Rarely	26	26	27	27	28	27	24	20	18				
Sometimes	28	31	28	27	26	28	27	30	23				
Frequently	12	13	12	12	11	12	13	12	11				
Don't know	3	3	4	4	2	3	2	4	2				
Total	100	100	100	100	100	100	100	100	100				
Use environmentally-friendly ways of controlling insects, weeds, and pests													
Never	54	48	50	54	55	52	57	43	54				
Rarely	19	20	20	18	20	19	18	20	16				
Sometimes	13	16	13	13	11	13	12	20	17				
Frequently	7	8	7	7	6	7	7	12	9				
Don't know	7	8	10	8	8	9	6	5	4				
Total	100	100	100	100	100	100	100	100	100				
Do something in order to reduce his/her greenhouse gas emissions													
Never	45	39	40	41	45	41	50	46	55				
Rarely	21	24	21	20	23	22	21	23	17				
Sometimes	21	22	22	23	20	22	19	18	17				
Frequently	8	10	10	10	7	9	7	6	7				
Don't know	5	5	7	6	5	6	3	7	4				
Total	100	100	100	100	100	100	100	100	100				

Appendix Table 16 (continued)

OTHER BEHAVIORS & OPINIONS ABOUT SUSTAINABILITY

(percentage distribution)*

2012	All Students	Undergraduate Students					Graduate Students	Staff	Faculty				
		Fresh	Soph	Junior	Senior	All							
<i>Would you support or oppose the following governmental policies?</i>													
<i>A 20 cent increase in the price per gallon of gasoline, if the extra money were used to improve local public transportation</i>													
Strongly support	14	8	9	10	13	10	20	12	36				
Moderately support	27	25	22	24	25	25	31	24	28				
Neither support nor oppose	17	17	18	17	18	18	19	18	15				
Moderately oppose	24	31	27	25	23	26	19	18	12				
Strongly oppose	18	19	24	24	21	21	12	28	9				
Total	100	100	100	100	100	100	100	100	100				
<i>A requirement that electric utilities produce at least 40% of their electricity from wind, solar, or other renewable energy sources, even if it costs the average household an extra \$100 a year</i>													
Strongly support	22	20	21	19	23	21	25	22	41				
Moderately support	34	35	33	34	33	34	33	30	32				
Neither support nor oppose	20	21	21	20	18	20	20	19	12				
Moderately oppose	14	15	13	16	15	15	13	13	7				
Strongly oppose	10	9	12	11	11	10	9	16	8				
Total	100	100	100	100	100	100	100	100	100				
<i>A ban on disposable plastic bags</i>													
Strongly support	23	21	21	20	26	21	30	23	34				
Moderately support	30	30	30	32	30	31	28	30	32				
Neither support nor oppose	24	24	26	22	21	23	25	27	19				
Moderately oppose	14	15	14	16	14	15	11	11	10				
Strongly oppose	9	10	9	10	9	10	6	9	5				
Total	100	100	100	100	100	100	100	100	100				
<i>A tax on fuels - like gasoline and natural gas - according to their carbon content, if the extra money were used for clean energy projects</i>													
Strongly support	18	14	14	15	18	16	25	13	38				
Moderately support	31	32	28	29	30	30	32	30	33				
Neither support nor oppose	25	25	25	24	24	24	25	24	14				
Moderately oppose	15	18	18	18	15	17	11	14	7				
Strongly oppose	11	11	15	14	13	13	7	19	8				
Total	100	100	100	100	100	100	100	100	100				

Appendix Table C16 (continued)

OTHER BEHAVIORS & OPINIONS ABOUT SUSTAINABILITY

(percentage distribution)*

2012	All Students	Undergraduate Students				All	Graduate Students	Staff	Faculty				
		Fresh	Soph	Junior	Senior								
<i>How much would you be willing to pay personally each year to...</i>													
<i>Expand waste prevention efforts, such as recycling and green purchasing at U-M</i>													
\$0	21	19	23	23	21	21	20	34	19				
\$1-\$10	36	35	35	38	39	37	35	29	15				
\$11-\$20	21	24	23	20	20	22	20	16	17				
\$21-\$30	9	10	9	10	8	9	9	10	12				
\$31-\$40	3	4	3	2	3	3	3	2	5				
\$41-\$50	10	8	7	7	9	8	13	9	32				
Total	100	100	100	100	100	100	100	100	100				
<i>Expand alternative transportation efforts such as buses, bikes, and carpools at U-M</i>													
\$0	21	19	22	23	24	22	20	40	22				
\$1-\$10	30	30	30	34	29	31	30	23	13				
\$11-\$20	22	23	24	20	23	22	20	14	15				
\$21-\$30	11	13	10	11	10	11	10	9	12				
\$31-\$40	4	5	4	4	4	4	4	2	5				
\$41-\$50	12	10	10	8	10	10	16	12	33				
Total	100	100	100	100	100	100	100	100	100				
<i>Expand efforts to lower greenhouse gas emissions at U-M through energy conservation and renewable sources</i>													
\$0	23	20	23	24	23	22	23	38	20				
\$1-\$10	32	33	31	34	34	33	31	26	14				
\$11-\$20	20	22	22	21	19	21	18	14	16				
\$21-\$30	10	11	10	10	10	11	9	9	12				
\$31-\$40	4	4	4	3	4	4	5	3	6				
\$41-\$50	11	10	10	8	10	9	14	10	32				
Total	100	100	100	100	100	100	100	100	100				

Appendix Table C16 (continued)

OTHER BEHAVIORS & OPINIONS ABOUT SUSTAINABILITY

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All		
<i>How likely is it that the following things will be a priority for you, at some point in the future?</i>								
<i>Being able to walk, bike, or take the bus places from where you live</i>								
Very likely	58	50	56	53	55	54	66	
Somewhat likely	31	35	31	34	32	33	26	
Not very likely	9	13	10	11	10	11	6	
Not at all likely	2	2	3	2	3	2	2	
Total	100	100	100	100	100	100	100	
<i>Buying sustainable food</i>								
Very likely	34	29	30	29	31	30	41	
Somewhat likely	41	41	41	41	43	41	40	
Not very likely	19	24	22	24	21	23	14	
Not at all likely	6	6	7	6	5	6	5	
Total	100	100	100	100	100	100	100	
<i>Conserving natural resources by reducing waste, reducing things, and recycling</i>								
Very likely	49	47	45	45	46	46	55	
Somewhat likely	39	40	40	44	42	41	36	
Not very likely	9	10	11	9	10	10	7	
Not at all likely	3	3	4	2	2	3	2	
Total	100	100	100	100	100	100	100	
<i>Take care of your home and property in environmentally-friendly ways</i>								
Very likely	44	41	44	41	42	42	49	
Somewhat likely	42	44	41	44	43	43	39	
Not very likely	11	12	12	13	13	13	9	
Not at all likely	3	3	3	2	2	2	3	
Total	100	100	100	100	100	100	100	
<i>Reducing your greenhouse gas emissions as much as possible</i>								
Very likely	34	31	33	33	32	32	36	
Somewhat likely	43	44	41	41	44	43	44	
Not very likely	18	20	20	21	19	20	15	
Not at all likely	5	5	6	5	5	5	5	
Total	100	100	100	100	100	100	100	

Appendix Table C16 (continued)

OTHER BEHAVIORS & OPINIONS ABOUT SUSTAINABILITY

(percentage distribution)*

2012	All Students	Undergraduate Students				Graduate Students	Staff	Faculty				
		Fresh	Soph	Junior	Senior							
<i>How concerned are you about the following things?</i>												
The impact that people's travel - by car and plane - has on the environment												
Very concerned	23	21	21	20	20	21	27	16				
Somewhat concerned	53	52	54	52	55	53	53	55				
Not that concerned	19	22	20	23	20	21	16	24				
Not at all concerned	5	5	5	5	5	5	4	5				
Total	100	100	100	100	100	100	100	100				
Whether food is grown and produced in a way that is good for the environment												
Very concerned	25	20	20	20	24	21	31	26				
Somewhat concerned	48	48	47	50	48	48	48	53				
Not that concerned	22	26	27	25	23	26	17	18				
Not at all concerned	5	5	6	5	5	5	4	3				
Total	100	100	100	100	100	100	100	100				
Natural resources - like water and fossil fuels - being used up												
Very concerned	42	43	42	40	42	42	35	49				
Somewhat concerned	43	44	42	44	44	43	50	41				
Not that concerned	12	10	12	13	11	12	12	8				
Not at all concerned	3	3	4	3	3	3	3	2				
Total	100	100	100	100	100	100	100	100				
People producing too much waste												
Very concerned	43	42	41	38	43	41	37	48				
Somewhat concerned	44	44	44	47	42	44	50	45				
Not that concerned	11	11	12	13	12	12	11	6				
Not at all concerned	2	3	3	2	3	3	2	1				
Total	100	100	100	100	100	100	100	100				
The loss of open space												
Very concerned	39	39	39	34	37	37	38	46				
Somewhat concerned	43	43	41	47	44	44	46	42				
Not that concerned	15	15	17	17	16	16	15	10				
Not at all concerned	3	3	3	2	3	3	2	2				
Total	100	100	100	100	100	100	100	100				
The loss of wildlife habitat												
Very concerned	48	52	49	45	47	48	46	52				
Somewhat concerned	39	36	38	42	40	39	40	39				
Not that concerned	11	10	11	12	11	11	12	8				
Not at all concerned	2	2	2	1	2	2	1	1				
Total	100	100	100	100	100	100	100	100				

Appendix Table C16 (continued)

OTHER BEHAVIORS & OPINIONS ABOUT SUSTAINABILITY

(percentage distribution)*

2012	All Students	Undergraduate Students				All	Graduate Students	Staff	Faculty				
		Fresh	Soph	Junior	Senior								
<i>How concerned are you about the following things?</i>													
Population growth													
Very concerned	38	40	36	38	36	37	40	28	39				
Somewhat concerned	42	41	41	43	44	42	41	47	42				
Not that concerned	17	16	19	16	17	17	16	20	15				
Not at all concerned	3	3	4	3	4	4	3	5	4				
Total	100	100	100	100	100	100	100	100	100				
<i>Overall, how committed are you to sustainability?</i>													
Very committed	15	13	13	11	14	13	18	13	25				
Somewhat committed	61	61	58	60	58	59	65	65	63				
Not very committed	22	24	25	27	26	26	16	20	11				
Not at all committed	2	2	4	2	2	2	1	2	1				
Total	100	100	100	100	100	100	100	100	100				
<i>Who or what has been most influential in shaping your views about sustainability?</i>													
Friends or classmates	27	22	23	27	27	25	32	25	21				
Parents or other family members	23	28	26	24	17	24	21	24	15				
K-12 teachers	10	23	14	10	7	14	4	3	1				
U-M professors/instructors	11	5	14	17	22	14	6	2	3				
Childhood experience outdoors	12	13	11	10	11	11	12	15	15				
Media--readings, video, movies, TV	5	3	3	3	5	4	8	15	26				
Other	12	6	9	9	11	8	17	16	19				
Total	100	100	100	100	100	100	100	100	100				

* Percentage distributions are based on the weighted number of respondents to each question. The actual number of respondents for each question differs since not all questions were answered by all respondents. The minimum number of respondents for each group of students and for faculty and staff is shown below.

Number of respondents	3978	1067	818	893	749	3527	447	1045	1022
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Appendix D. Constructing Indicators

The creation of indicators or indices is a complex process that combines responses to closely related questions about a common idea, concept, or action. These responses may or may not be statistically correlated. Weakly correlated responses that reflect different dimensions of the same idea, concept, or action can nevertheless be combined to create a desired indicator.⁴³

In order to summarize findings covering key concepts reflecting the culture of sustainability, several indicators were created. The procedure consisted of two steps. First, conceptually related items were identified and, for each respondent, the coded or numeric values of the responses to each were combined or added together.

For most of the indices, the number of response categories to their respective questions was identical.⁴⁴ Numerical values were assigned to responses such that higher values represented the most sustainable forms of behavior or the highest levels of awareness, while the lower values represented the least sustainable behaviors or lowest levels of awareness. For example, for responses to the question, “During the past year, how often did you turn off lights when leaving the room”, “always/most of the time” was coded 4, “sometimes” was coded 3, “rarely” was coded 2, and “never” was coded 1. Together with 3 other questions, the maximum summary score for any respondent would be 16 and the minimum score would be 4. The distribution of summary scores for all student and staff/faculty respondents was then tabulated.

Respondents who said “don’t know” or “not applicable” to questions used in developing selected indicators were not included when building those indicators. That is, index scores were not calculated for these respondents. On occasion, some of the remaining respondents skipped one of the questions comprising the index. Rather than eliminating these respondents from the analysis and thus reducing the sample size, the modal value of all other respondents to the question was assigned to the non-response item. These respondents were then retained in the sample. The operational rule for dealing with missing values was as follows. For indicators consisting of one or two items, participants with one or two non-responses were excluded from the analysis. For indicators consisting of three items, respondents with one non-response were assigned the modal value to that item. For indicators using four or more than four items, participants who had more than 2 non-responses were eliminated from the analysis. Those with one or two non-response items were assigned the modal value of all responses to those items.

The second step involved the creation of a common metric or scale for all indicators. This was necessary since the range of scores for each indicator varied. Some varied from one to four while others varied from eight to thirty-two. In order to make the indicators comparable and easier to understand, all the indicators were converted to common metric or a zero-to-ten scale. For instance, the summed Waste Prevention Behavior Index for participants ranged from 4 to 16. In this case, the minimum value (4) was subtracted from the maximum value (16) resulting in a scale ranging from 0 to 12. Each value was then divided by the new maximum value (12), so that the new index score would be between 0 to 1. That score was then multiplied by 10, resulting in a value ranging from 0 to 10. SPSS Complex Samples was then used to determine the distributions and the mean scores of indicators.⁴⁵

⁴³ Exploratory factor analysis with a Cronbach Alpha is typically used to assess associations and the internal consistency in a set of responses. The alphas for the indices used in this report vary from .32 to .94. See Appendix D, Table D1 below shows the alphas and a summary of the items used in creating each index. In general, the highest values are associated with the awareness indices while the lowest values are found in the behavioral indices. For example, it is not surprising to find respondents who always *turn off lights when leaving a room* to never or sometimes *turn off their computers*. Nonetheless, both behaviors represent energy-saving actions and have been used in creating the conservation behavior indicator.

⁴⁴ The exception was Sustainability Food Purchase Index, where one question had five response options while the other two questions had four. These three variables could not be added up immediately. These three variables were first normalized and after normalizing, were added together.

⁴⁵ SPSS Complex Samples gives more accurate statistical estimates than Base SPSS.

Table D1

SUSTAINABILITY CULTURAL INDICATORS CONSTRUCTION

(names of items, Alpha, and number of items)

2012		Students	Staff/Faculty	
Name of Index	Name of Items	No. of items	Name of Items	No. of items
PRIMARY				
<i>Climate Action</i>				
Conservation Behavior	turn off lights, use computer power-saver, turn off computer, use motion sensor ($\alpha=0.38$)	4	turn off lights, use computer power-saver, turn off computer, use motion sensor (at work) ($\alpha=.46$)	4
Travel Behavior	Most often mode of travel to campus since fall semester	1	Most often mode of travel to work	1
<i>Waste Prevention</i>				
Waste Prevention Behavior	printer double-sided, recycle paper, etc., use reusable cups, etc., use property disposition ($\alpha=0.36$)	4	printer double-sided, recycle paper, etc., use reusable cups, etc., use property disposition (at work) ($\alpha=.32$)	4
<i>Healthy Environments</i>				
Sustainable Food Purchases	Buy sustainable food; organic, locally-grown ($\alpha=0.78$)	3	Buy sustainable food; organic, locally-grown ($\alpha=.72$)	3
Protecting the Natural Environment	use fertilizer, herbicides, water lawn ($\alpha=0.86$)	3	use fertilizer, herbicides, water lawn ($\alpha=0.78$)	3
<i>Community Awareness</i>				
Sustainable Travel & Transportation	AATA, UM buses, biking, Zipcar rental ($\alpha=0.52$)	4	AATA, UM buses, biking, Zipcar rental ($\alpha=.72$)	4
Waste Prevention	recycle glass, plastic, paper, electrical waste; property disposition ($\alpha=0.84$)	5	recycle glass, plastic, paper, electrical waste; property disposition ($\alpha=.86$)	5
Natural Environment Protection	dispose hazardous waste; recognize invasive species; residential property; protect Huron River ($\alpha=0.83$)	4	dispose hazardous waste; recognize invasive species; residential property; protect Huron River ($\alpha=.87$)	4
Sustainable Foods	locally grown; organic; fair trade; humanely-treated, hormones-free; grassfed; sustainable fish ($\alpha=0.93$)	7	locally grown; organic; fair trade; humanely-treated, hormones-free; grassfed; sustainable fish ($\alpha=.94$)	7
U-M Sustainability Initiatives	save energy; encourage bus or bike; promote ride sharing, recycling, sust food; reduce greenhouse gas; maintain grounds; protect Huron River ($\alpha=0.90$)	8	save energy; encourage bus or bike; promote ride sharing, recycling, sust food; reduce greenhouse gas; maintain grounds; protect Huron River ($\alpha=0.91$)	8
SECONDARY				
Sustainability Engagement at U-M	participate in sustain. org.; Earthfest, sustain class ($\alpha=0.64$)	3	participate in org.; Earthfest ($\alpha=0.42$)	2
Sustainability Engagement Generally	give money, voting, volunteering, serving as officer ($\alpha=0.56$)	4	give money, voting, volunteering, serving as officer ($\alpha=0.49$)	4
Sustainability Commitment	how committed to sustainability	1	how committed to sustainability	1
Sustainability Disposition	willingness to pay items ($\alpha=0.89$)	3	willingness to pay items ($\alpha=0.94$)	3
Rating U-M Sustainability Initiatives	save energy; encourage bus or bike; promote ride sharing, recycling, sust food; reduce greenhouse gas; maintain grounds; protect Huron River ($\alpha=0.89$)	8	save energy; encourage bus or bike; promote ride sharing, recycling, sust food; reduce greenhouse gas; maintain grounds; protect Huron River ($\alpha=0.91$)	8

Appendix E. Supplemental Maps

The following maps show the number and spatial distribution of students, staff, and faculty that responded to the 2012 survey. The maps cover each U-M campus, region, and sub-region in Ann Arbor. The student maps show the location of the residence halls where respondents lived, the U-M building where they spent more than half of their time, and approximate number of respondents in each. The maps covering U-M employees (staff and faculty) show the U-M buildings where they primarily worked and the approximate number of respondents from each building. The maps suggest possible geographic units for subsequent spatial analysis of the survey data. The maps do not show the place of residence for student respondents living off-campus nor the places of employment for staff and faculty respondents working in rented space or in U-M buildings outside Central Campus, North Campus, South Campus, East Campus, and the Medical Campus.

Figure E1

**2012 STUDENT RESPONDENTS -
RESIDENCE HALLS***

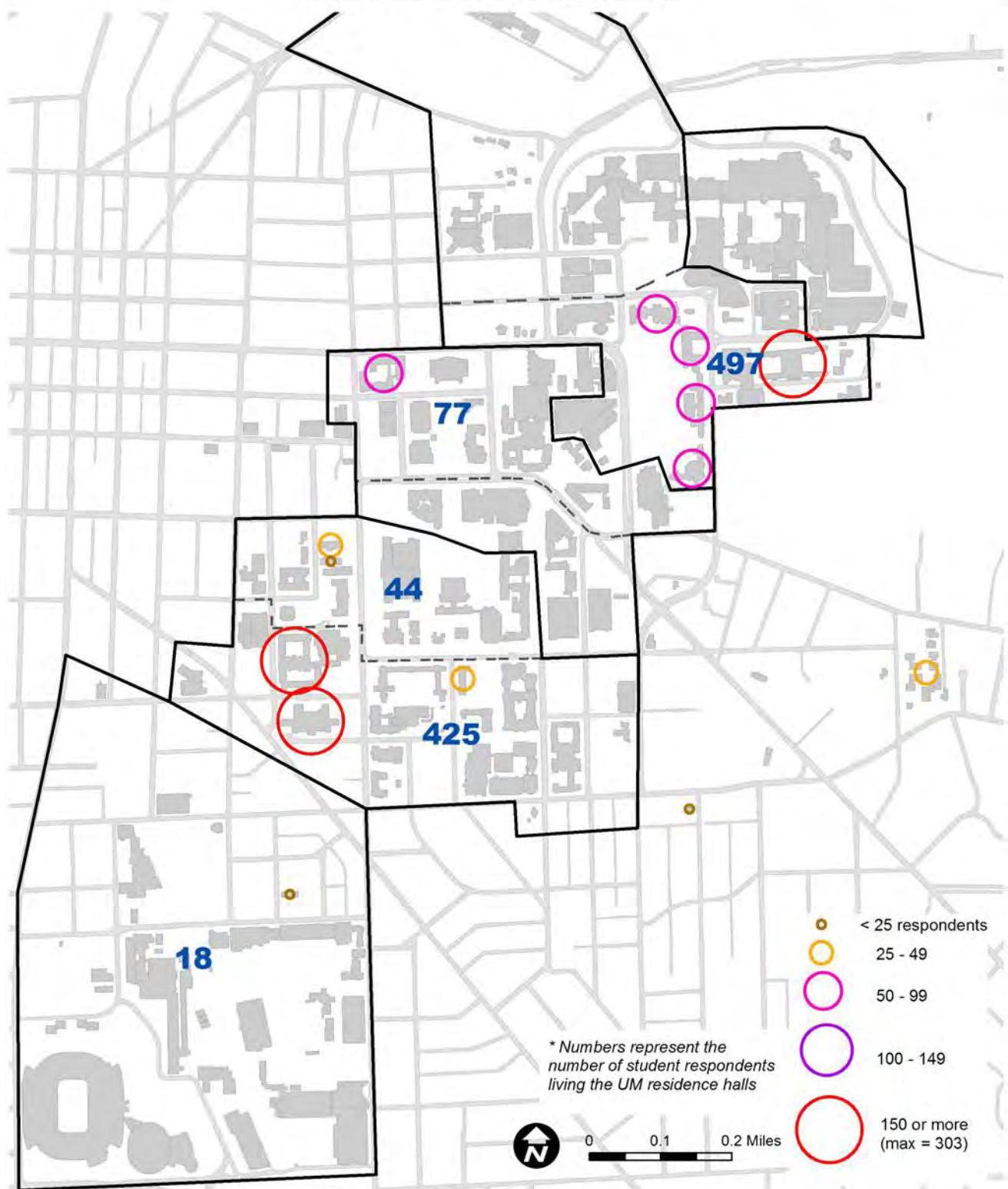


Figure E2

2012 STUDENT RESPONDENTS - RESIDENCE HALLS*

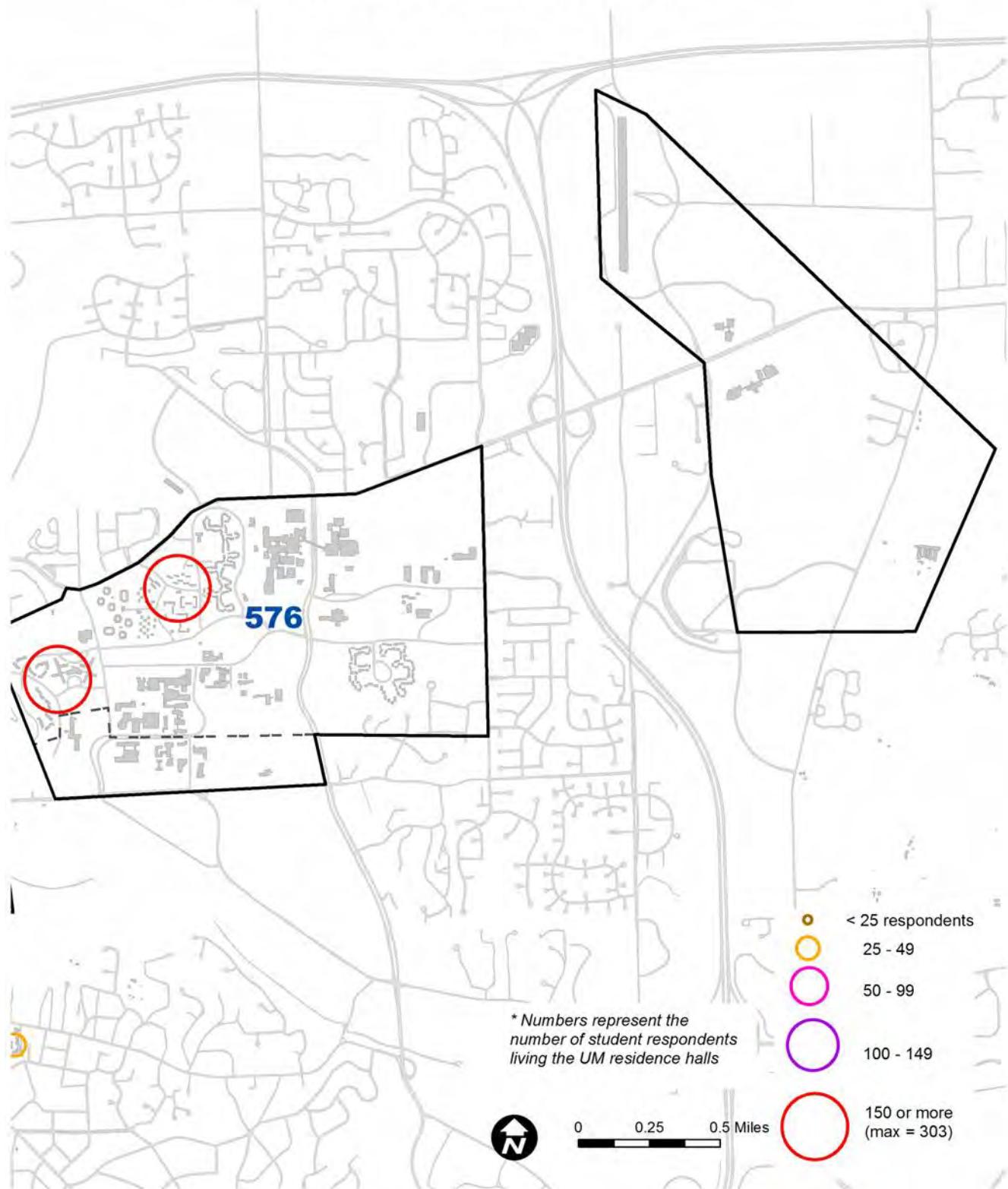


Figure E3

2012 STUDENT RESPONDENTS - ACADEMIC BUILDING USED*

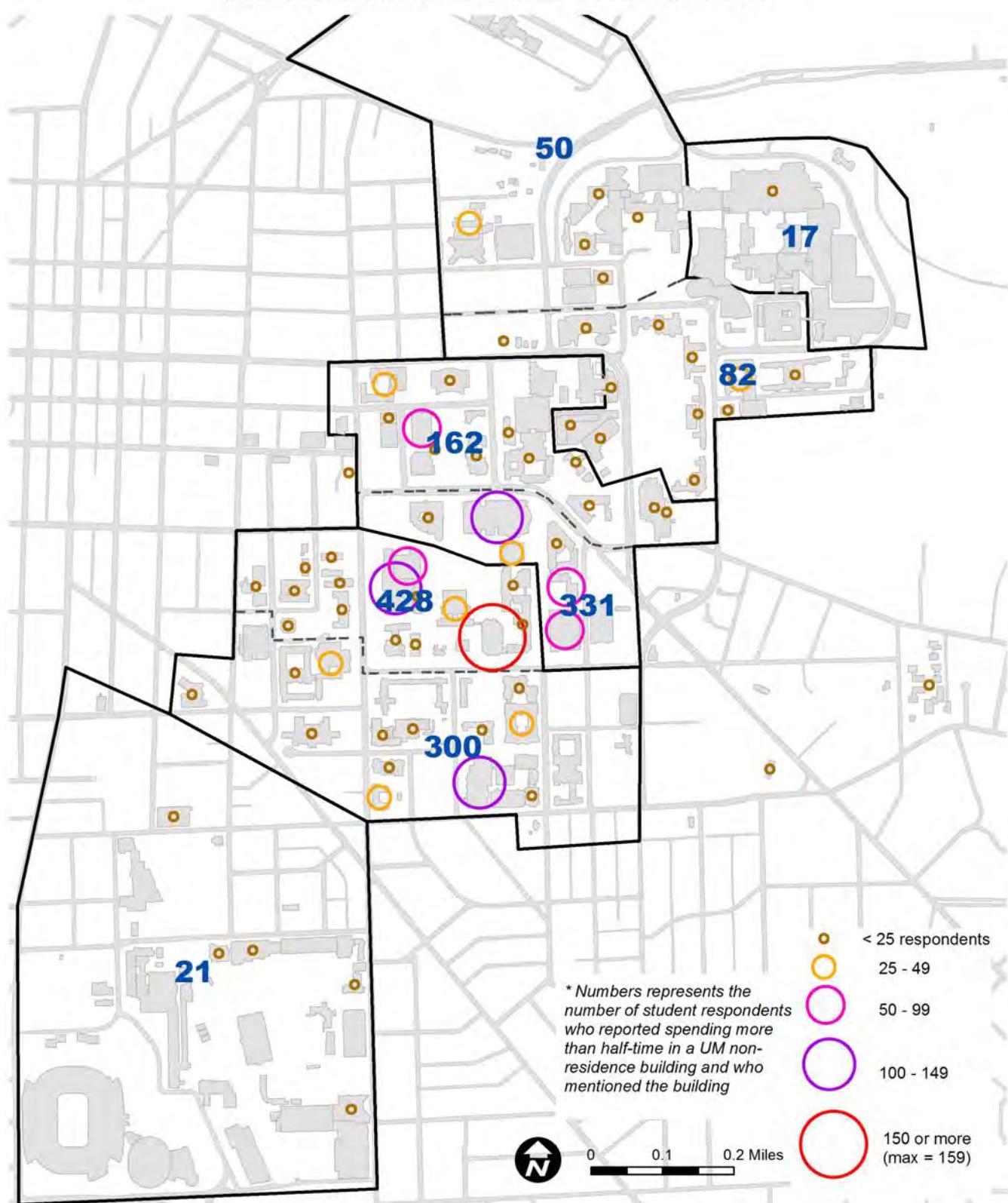


Figure E4

**2012 STUDENT RESPONDENTS -
ACADEMIC BUILDING USED***

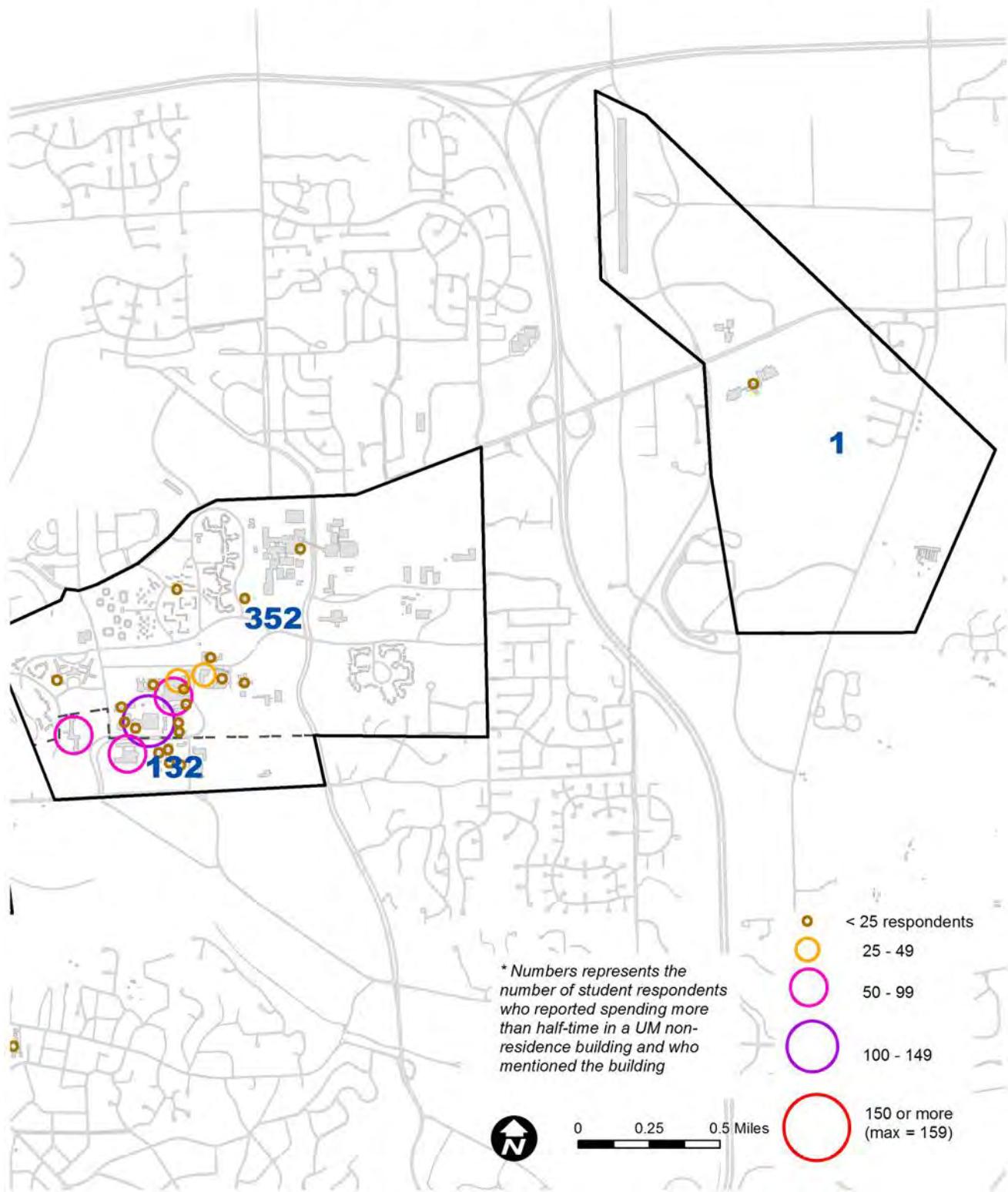


Figure E5

2012 STAFF/FACULTY RESPONDENTS - BUILDING & WORK LOCATION*

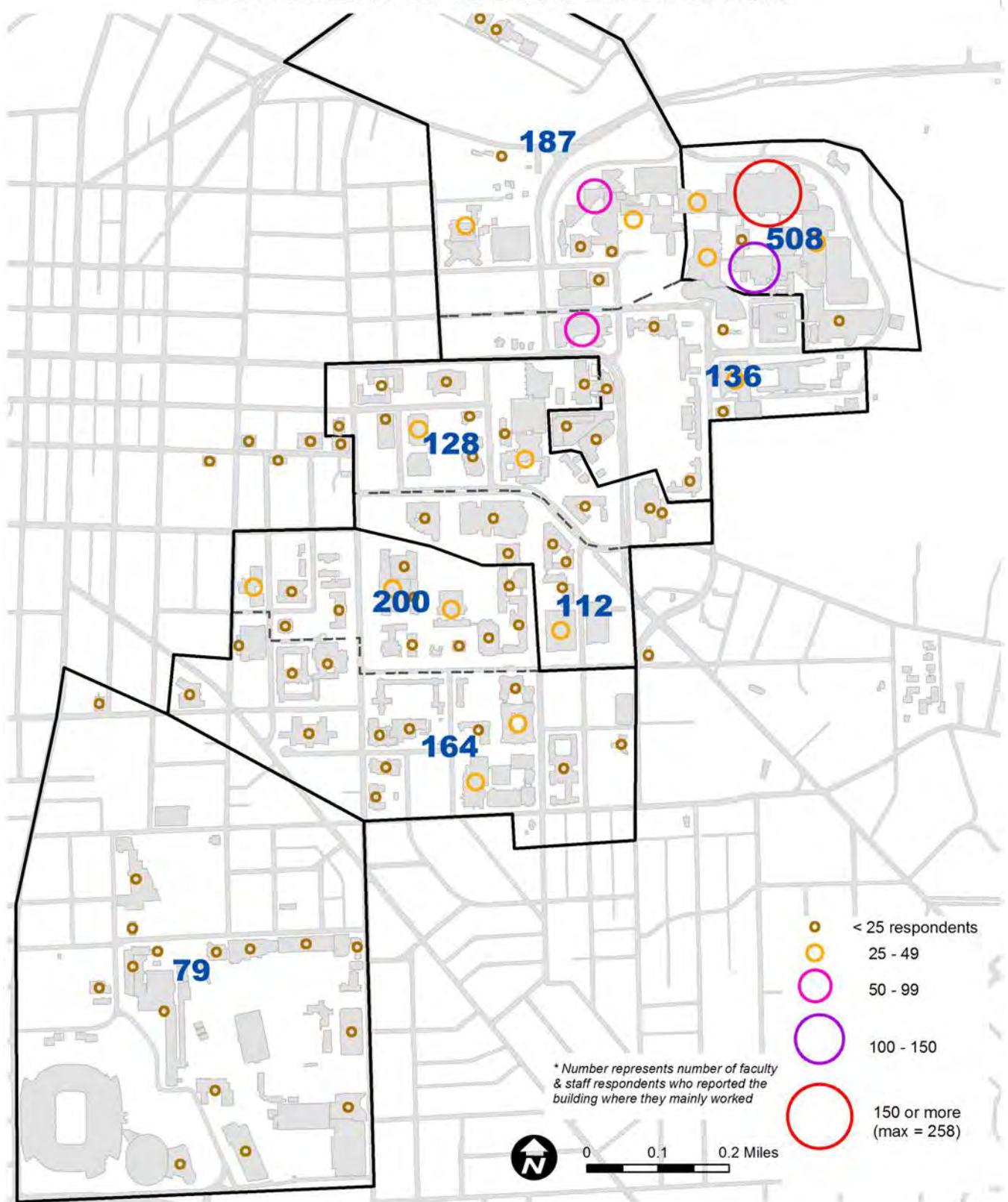
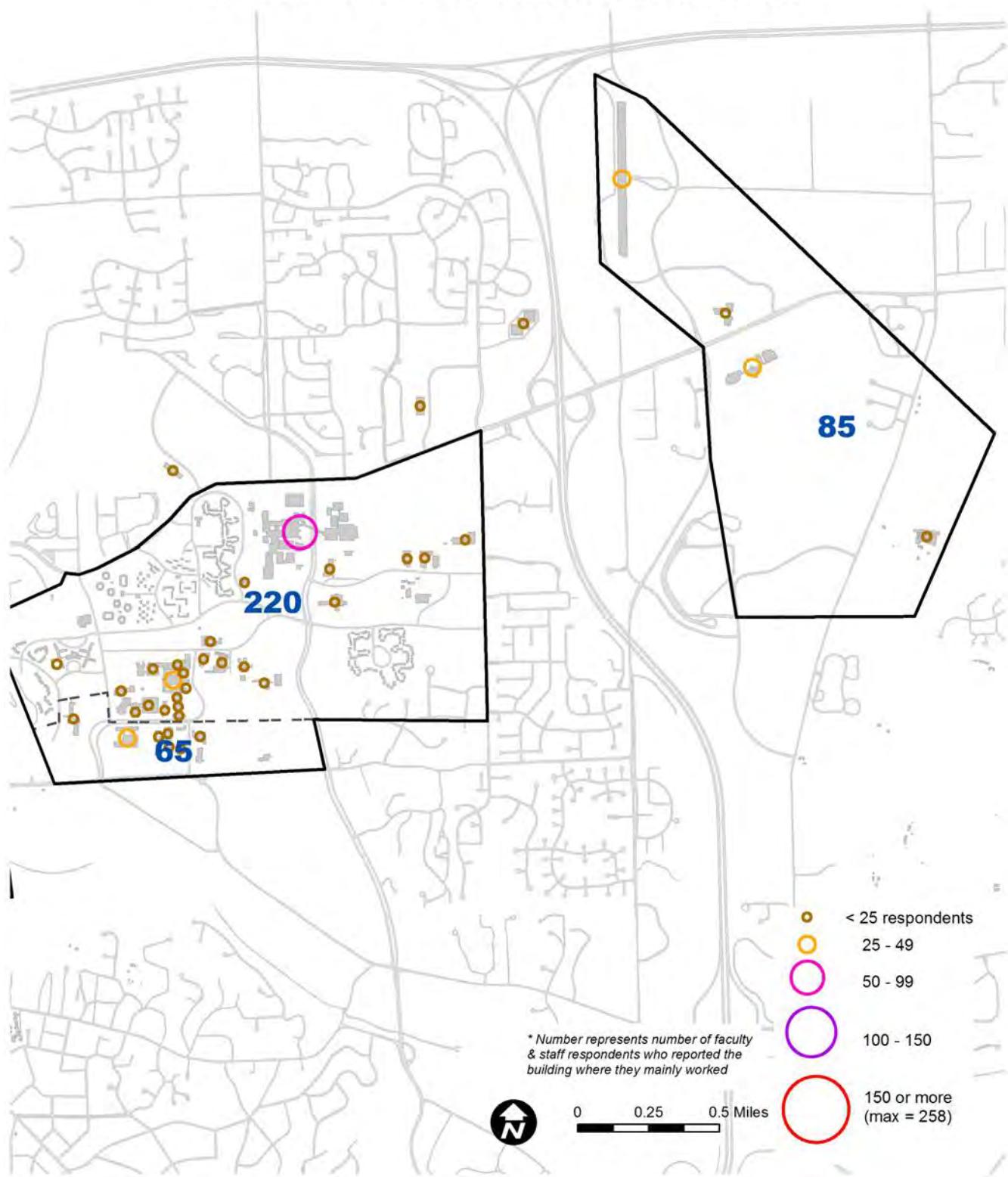


Figure E6

2012 STAFF/FACULTY RESPONDENTS - BUILDING & WORK LOCATION*



References

- Ehrenfeld, J., Hoffman, A. J. (2013). *Flourishing: a frank conversation about sustainability*. Stanford, California: Stanford Business Books, an imprint of Stanford University Press.
- Ehrenfeld, J. (2009). *Sustainability by design: a subversive strategy for transforming our consumer culture*. New Haven: Yale University Press.
- Hollweg, K.S., Taylor, J.R., Bybee, R.W., Marcinkowski, T.J., McBeth, W.C., & Zoido, P. (2011). *Developing a framework for assessing environmental literacy*, North American Association for Environmental Education, Available from: <<http://www.naaee.net>>. [15 July 2012]
- Leiserowitz, A., Maibach, E., Roser-Renouf, C., Feinberg, G., & Howe, P. (2012). *Climate change in the American mind: Americans' global warming beliefs and attitudes in September, 2012*. Yale University and George Mason University. New Haven, CT: Yale Project on Climate Change Communication. <http://environment.yale.edu/climate/files/Climate-Beliefs-September-2012.pdf>
- Marans, R.W., Levy, B., Bridges, B., Keeler, K., Avrahami, T., Bennett, J., Davidson, K., Goodman, L., Holdstein, B., & Smith, R. (2010). *Campus sustainability integrated assessment: Culture team phase I report*, Available from: <<http://www.graham.umich.edu/pdf/culture-phase1.pdf>>. [10 January 2012]
- Marans, R.W., Shriberg, M. (2012). *Creating and assessing a campus culture of sustainability: The University of Michigan experience*, in Sustainable development at universities: new horizons, Filho, W.F. (ed.) Frankfurt: Peter Lang.
- Marlon, J.R., Leiserowitz, A., and Feinberg, G. (2013). *Scientific and Public Perspectives on Climate Change*. Yale University. New Haven, CT: Yale Project on Climate Change Communication.
- Schoolman, E.D., Shriberg, M., Schwimmer, S. & Tysman, M. (in submission). "Scratching the green surface: do higher education sustainability initiatives matter beyond the campus bubble?" *Journal of Environmental Studies and Sciences*.
- Senge, P. (2000). *The fifth discipline: The art and science of the learning organization*, Crown Business, New York.
- Sharp, L. (2002). "Green campuses: The road from little victories to systemic transformation", *International Journal of Sustainability in Higher Education*, vol. 3 no. 2, pp. 128-145.
- Sharp, L. (2009). "Higher education: the quest for a sustainable campus", *Sustainability: Science, Practice & Policy*, vol. 5 no. 1, pp. 1-8.

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