

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

**MONITORING THE CULTURE OF SUSTAINABILITY
AT THE UNIVERSITY OF MICHIGAN: FALL 2015**



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This is a Graham Sustainability Institute report and is available at:

<http://graham.umich.edu/campus/scip>

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 administrators 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 attitudes, 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 the results from Year 4 and provide a comparison to the Year 1 results (baseline measures). The findings are largely descriptive in that all survey responses are reported for the three key groups of the University community---its students, staff, and faculty. Two separate web questionnaires are used for SCIP --- 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 2015, more than 3300 students including a panel of current undergraduate students who first completed the 2012 survey, 829 staff, and 1185 faculty participated in the survey representing a 25.5 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 this report.

In general, findings from four years of data collection (2012-2015) indicate that U-M has made progress with waste prevention among students and faculty, in promoting sustainable food, and engaging the campus community through efforts just as the Planet Blue Ambassadors program. Additional results indicate that more efforts are needed to promote sustainable transportation options, energy conservation efforts, and promoting ways to expand involvement in U-M sustainability activities. In addition, several key items can be identified when the indicators for 2015 are compared against the results from 2012.

First, there is considerable room for improvements in the pro-environment behaviors, levels of awareness, degrees of engagement, and expressions of commitment to sustainability among members of the University community.

Second, students' mode of travel to and from campus is more in line with the goal of greenhouse gas reduction than the journey to work of staff and faculty. Not surprisingly, students are most likely to walk, bike, or bus to campus. Similarly, students are likely to know more than University employees about transportation options available to them in and around Ann Arbor.

Third, faculty are more engaged in pro-environmental behaviors than students or staff outside the University. These activities include conserving energy, preventing waste, and purchasing sustainable foods. Faculty members also express a higher degree of commitment to sustainability than staff or students.

Fourth, students know less than staff or faculty about natural environment protection, preventing waste, and sustainable foods.

Fifth, staff tend to know more about U-M's sustainability initiatives than either students or faculty. Yet students are more engaged than either staff or faculty in sustainability activities on campus.

Finally, all groups express high levels of commitment to sustainability.

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A. INTRODUCTION

This report presents findings from surveys of University of Michigan (U-M) students, staff and faculty conducted during the fourth year (2015) of the Sustainability Cultural Indicators Program (SCIP). SCIP is a multi-year initiative designed to measure and track the *culture of sustainability* on the U-M's Ann Arbor campus. It is intended to inform U-M administrators 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 cover Year 4 results as well as changes that have occurred since SCIP data were first reported in 2012. The findings are largely descriptive in that all survey responses are reported for the three key groups 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 future years as more users of the findings and academic researchers see the richness of the data and opportunities to explore them.

Organization of the Report

The report is organized in five sections. Following this introduction, the next section (B) provides a brief overview on the background to SCIP. Section C describes the survey design including the sampling plan and discusses salient characteristics of the respondents. For students, these characteristics include select 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 2015 surveys. These Year 4 findings draw from detailed tables showing all survey responses for each undergraduate cohort and graduate students as well as for staff and faculty. The section concludes with a summary of the sustainability indicators characterizing the culture of sustainability at the U-M in 2015 and the changes, if any that have taken place since 2012. Finally, Section E discusses ongoing work related to SCIP. Specifically, it outlines plans for current and future analyses and discusses an intervention that is currently underway in one location area of campus. It also discusses 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 those changes are seen as critical to addressing complex and pressing environmental issues.

B. BACKGROUND

Campus Sustainability Integrated Assessment

In October 2009, former 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 built 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.

The final CSIA report outlined 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.

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>

¹ The Council was 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/emopps/campus> . Information on progress towards the 2025 Climate Action, Waste Prevention, and Healthy Environments goals can be found at: <http://sustainability.umich.edu/ocs/goals>.

In the fall of 2014 U-M President Mark Schlissel initiated a review of U-M's sustainability goals in three key areas – waste prevention, climate action, and culture. Teams of students, staff, and faculty were charged with reviewing current programs and their impacts on goal progress; identifying a range of options for making significant progress toward the goals, and developing high-level plans for achieving the goals.³ SCIP results from 2012 and 2013 were used to inform the work of the teams and the culture team's report included suggestions for additional ways SCIP results could be used to inform and evaluate campus sustainability efforts.

The Sustainability Cultural Indicators Program

U-M cultural change initiatives stem from the principles outlined under the CSIA theme of Community Awareness. They indicated that the U-M will “pursue evaluation strategies toward a campus-wide ethic of sustainability” as articulated in former 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.”⁴ Combined with the education and leadership development initiatives of the Planet Blue Ambassadors program, the evaluation strategies of the Sustainability Cultural Indicators Program (SCIP) involve a groundbreaking program for monitoring the U-M’s progress in moving toward a culture of sustainability.⁵ Progress is determined by tracking a set of cultural indicators derived from responses to campus-wide sustainability questionnaires over time.

Two separate questionnaires are used for SCIP --- one for staff and faculty, and one for students. While many of the questions are similar, different time frames and sequences are used in the two versions. For example, the staff and faculty survey asks questions within a time frame of the past year while students are asked to answer questions based on their experience since the start of the fall semester. Also, students are 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 do not apply to students living in campus housing while staff and faculty demographic questions are asked at the end of the survey. In order to retain members of the undergraduate student panel, several questions were eliminated for the student questionnaire so as to shorten the time required to complete it. Most respondents complete the survey in about 15 minutes. As a primary objective of SCIP is to work closely with the goals of the CSIA, questionnaire 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.

Following the release of the Year 1 report a program website was developed to share key results and materials.⁶ During FY 2015 there were over 1000 views of the [program website](http://graham.umich.edu/campus/scip). More than 150 requests have been received for copies of the survey instruments from other institutions. Five book chapters and four journal articles have been produced and discussion of SCIP and its findings has been presented at more than a dozen major conferences.

³ Committee reports and recommendations from this effort can be found at: <http://sustainability.umich.edu/about/goals>

⁴ To read former President Coleman’s address and other information on the U-M’s sustainability goals, please visit: <http://sustainability.umich.edu/commitment>.

⁵ For an overview of the Planet Blue Ambassadors Program, please visit: <http://graham.umich.edu/campus/pba>.

⁶ The program website can be found at: <http://graham.umich.edu/campus/scip>.

C. 2015 POPULATION AND SAMPLE

Records from the U-M's Office of the Registrar indicate that 43,651 full-time students were enrolled for classes at the Ann Arbor campus in fall 2015. At the same time, the U-M's Human Resources' Information and Data Services report that 6,731 faculty and 36,848 staff were employed at least half-time at the University.

In order to ensure proportional representation from all segment of the University community and from all geographic parts of the Ann Arbor campus, 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 1,000 respondents from the freshmen class, 350 respondents from each of the sophomore, junior and senior classes, and 400 graduate student respondents. The sample design also includes a panel of individual undergraduate students who responded to the initial survey in 2012. That is, the panel in 2013 was designated as the freshmen, sophomores, and juniors who completed the 2012 survey. In order to retain the panel each year, graduating seniors are replaced with the freshmen from the prior year. The 2014 panel includes 2012 freshmen and sophomores who responded in previous years and 2013 freshmen. The 2015 panel includes 2012 and 2013 freshmen, and the 2014 freshmen, sophomores and juniors. The panel was included in the research design so as to determine if and how the behaviors and views of individual students change during their period of undergraduate study at the University. Finally, a stratified sample was selected by the University's Office of Human Resources with a target of 750 staff and 750 faculty members⁷

The actual number of respondents and the response rates are shown in Table 2.⁸ The table indicates that the targeted number of participants was exceeded in each cohort. Response rates, however, were lower than those reported in 2014. Completion of questionnaires was attributable to several factors including the personalized pre-notification email encouraging participation from President Schlissel, a series of reminder e-mails including one from women's head basketball coach Kim Barnes Arico and an offer of a possible monetary incentive.

Table 2

NUMBER OF RESPONDENTS AND RESPONSE RATES

2015	Number of Respondents	Response Rates (%)
Students	2491	18.8
Fresh	960	24.1
Soph	393	15.5
Junior	338	12.6
Senior	365	14.1
Graduate	435	29.6
Staff	829	41.9
Faculty	1185	30.4
Student Panel	926	30.4
All Campus	5431	25.5

⁷ See Appendix A for a more detailed discussion of the sample selection procedure. The complete methodology report can be found at : <http://graham.umich.edu/campus/scip/materials>.

⁸ The calculation of response rates for students is based on their official status as determined by the Registrar's Office rather than the students' self-reported status. Some students who believe they are seniors may not have enough credits and according to official records, they are juniors. Similarly, other students may think they are sophomores but have enough credits to officially classify them as juniors.

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.

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 student respondents make up somewhat more than a third of the student body. Nearly a fifth (17 percent) of the respondents are international students with most of them (81 percent) coming from China or other Asian countries. Of the U.S. students, 6 in 10 are from Michigan; nearly two-thirds of them are from Southeast Michigan (Wayne –including Detroit, Oakland, Macomb, and Washtenaw counties).

Table 3

STUDENT CHARACTERISTICS

(percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students
Status (self-report)***		Fresh	Soph	Junior	Senior	All	
First-year (Freshmen)	18						
Sophomore	13						
Junior	16						
Senior	18						
Graduate	35						
Total	100						
Number of respondents	2490						
U.S.-International Student?							
U.S.	83	92	92	88	92	91	69
International	17	8	8	12	8	9	31
Total	100	100	100	100	100	100	100
Number of respondents	2448	1071	322	336	294	2023	425
Permanent Residence of U. S. Student[#]							
Michigan							
Wayne, Oakland, Macomb Co (incl. Detroit)	29	34	38	40	29	35	15
Washtenaw Co	8	8	8	10	12	10	5
Other MI Counties MI	23	28	23	26	29	26	14
Great Lakes States (IL,WI,MN,OH,IN,)	10	8	10	4	11	8	13
Northeast (NY,MA,NJ,MD,PA)	13	11	12	10	9	10	20
South (TX,OK,TN,VA,NC,SC,FL,GA,PR)	7	5	3	5	2	4	16
West (CA, OR,WA,AZ,NM,HI,AK)	7	5	6	3	5	5	13
Central West	3	1	**	2	3	2	4
Total	100	100	100	100	100	100	100
Number of respondents	2093	975	286	287	269	1817	276
Home Country of International Students							
China (incl. Hong Kong)	43	37	51	71	61	57	35
India	17	11	8	3	0	5	24
Other Asian countries (excl.China & India)	21	38	28	10	20	23	19
European countries	7	5	6	10	0	6	8
Mexico, Latin American, Central American, Caribbean countries	7	2	0	0	13	3	9
Elsewhere (incl. Middle East countries)	5	7	7	6	6	6	5
Total	100	100	100	100	100	100	100
Number of respondents	286	70	29	38	20	157	129
College/School							
LSA	43	60	55	48	50	53	24
Engineering	26	29	29	31	28	29	20
Ross Business	5	1	3	4	2	3	8
Rackham Graduate	0	0	0	0	0	0	0
Other colleges/schools (2% each of all students) ^a	8	6	6	9	11	8	9
Other colleges/schools (1% each of all students) ^b	8	2	3	3	5	3	16
Law	2	0	0	0	0	0	6
Public Health	3	0	0	0	0	0	9
Medicine	1	0	0	**	0	**	4
Dual degree	4	2	4	5	4	4	4
Total	100	100	100	100	100	100	100
Number of respondents	2450	1069	322	338	296	2025	425
a Includes Schools of Education, Information, Kinseology, 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							
Major (in LSA & Engineering)							
LSA							
Humanities	12	4	11	14	12	10	21
Natural Sciences	34	25	32	40	34	32	42
Social Sciences	25	13	22	32	34	25	28
Other	14	12	17	13	19	15	9
Undecided	15	46	18	1	1	18	0
Total	100	100	100	100	100	100	100
Number of respondents	1368	724	190	183	162	1259	109

Table 3 (continued)

STUDENT CHARACTERISTICS

(percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students
		Fresh	Soph	Junior	Senior	All	
Status (self-report)***							
Engineering							
Electrical Engineering & Computer Science	26	24	20	34	27	27	25
Mechanical	17	11	19	16	27	18	16
Aerospace	7	5	8	9	5	7	9
Chemical	9	9	16	10	9	11	6
Industrial & Operations	8	4	6	12	8	7	9
Biomedical	8	8	11	4	5	7	9
Materials Science	6	1	2	7	7	5	8
Other	11	4	12	8	10	8	18
Undecided	8	34	6	0	2	10	0
Total	100	100	100	100	100	100	100
Number of respondents	568	221	87	101	75	484	84

***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.

As in previous SCIP surveys, 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 evenly distributed throughout the entire University than undergraduates. More than half of the LSA undergraduate students and nearly two-thirds of the LSA graduate students majored in the social or natural sciences; 15 percent of the LSA undergraduates noted *undecided* when asked about their major. When asked to specify their major, a quarter of the Engineering undergraduate and graduate students mentioned programs in the Department of Electrical Engineering and Computer Science.

In fall 2015, a third of the student respondents lived in U-M housing - a resident hall or Northwood apartments (see Table 4 and Appendix F, Figures F1 and F2).⁹ 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. More than half of students (56 percent) moved to their current residence during the summer or just prior to the start of the new semester. Table 4 shows that the proportion of upper classmen who remained in their residence for a year or more increases with each subsequent cohort. Whereas 12 percent of the sophomores had lived in their current residence for a year or more, 22 percent of the juniors and 42 percent of the seniors gave this response. A fifth of the graduate students and 12 percent of the seniors were long-term residents having lived in their current residence for more than 2 years.

The third panel in Table 4 shows that the most frequently named residence halls among freshmen were the Bursley-Baits complex on North Campus followed by South Quad and Mary Markley and West Quad. The table also shows that for students who indicated they lived off-campus, most lived in the Ann Arbor

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 Science 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)*

2015	All Students	Undergraduate Students					Graduate Students
		Fresh	Soph	Junior	Senior	All	
<i>Type of Residence</i>							
U-M resident hall	27	96	44	10	5	37	7
Northwood community apartments	5	*	3	3	1	2	10
Off-campus house	39	2	31	46	44	31	54
off-campus apartment	23	*	12	31	44	23	25
Parent's house	2	1	1	4	4	3	1
Other	1	0	0	*	*	*	2
Off-campus housing such as a sorority, fraternity, or co-op.	3	1	9	6	2	4	1
Total	100	100	100	100	100	100	100
Number of respondents	2488	1079	330	345	301	2055	433
<i>Length of Residence</i>							
Less than 3 months	56	92	73	58	42	66	38
3-11 months	16	7	15	20	16	15	17
1-2 years	18	*	11	15	30	14	26
More than 2 years	10	1	1	7	12	5	19
Total	100	100	100	100	100	100	100
Number of respondents	2486	1078	330	345	301	2054	432
<i>Residence Hall</i>							
Bursley-Baits	21	30	9	13	5	23	0
South Quad	10	10	15	7	15	11	0
Mary Markley	11	18	*	12	0	13	0
West Quad	9	9	14	6	5	10	0
Mosher-Jordan	5	6	6	0	10	6	0
Couzens	5	5	5	13	0	5	3
Alice Lloyd	7	7	8	5	15	7	0
East Quad	7	8	9	8	10	8	0
Stockwell	4	0	19	6	0	5	0
North Quad	4	0	10	11	40	4	3
Other (Barbour, Cambridge, Cook, Fletcher, Henderson, Newberry)	17	7	5	19	0	8	94
Total	100	100	100	100	100	100	100
Number of respondents	1204	985	139	33	14	1171	33
<i>Place of Residence(locale)***</i>							
Ann Arbor area	91	74	97	94	94	94	86
Ypsilanti area	3	2	0	3	1	2	6
Other Washtenaw Co. cities, townships, villages	*	3	1	*	1	1	0
Other Michigan cities, townships, villages	5	21	2	3	4	3	7
Elsewhere	1	0	0	*	0	*	1
Total	100	100	100	100	100	100	100
Number of respondents	1078	33	141	280	276	730	348
<i>Number of Household Occupants#</i>							
One	14	0	5	7	8	7	23
2-3 persons	45	51	34	32	35	34	59
4-6 persons	31	44	52	46	37	28	16
More than 6 persons	10	5	9	15	20	31	2
Total	100	100	100	100	100	100	100
Mean Number of Occupants	4.5	3.6	5.4	4.5	4.5	4.7	4.2
Number of respondents	1078	32	141	280	246	699	349
<i>Availability of Car in Household</i>							
Yes	44	9	19	44	55	33	65
No	56	91	81	56	45	67	35
Total	100	100	100	100	100	100	100
Number of respondents	2445	1067	322	336	294	2019	426

#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: 48107 and 48108.

** 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.

area with small percentages commuting to the Ann Arbor campus.¹⁰ Figure 1 on the next page shows the places where students lived in the fall 2015. The places are based on responses to a question about the major street intersection near the place of residence.

Having roommates was common for students who said they lived off-campus. On average, there were somewhat fewer than 5 persons per household. Sophomores, many of whom reported living in a fraternity, sorority or co-op (based on open-ended responses), averaged 5.4 people at their place of residence.

Finally nearly half of the student respondents said there was at least one car in their household. Not surprisingly, graduate students, many of whom lived relatively far from campus were most likely to have a car available to them. Table 4 shows that having use of 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. Nearly three-quarters (71 percent) identified Central Campus with most of the remainder saying North Campus.¹¹ Freshmen were least likely to mention North Campus (8 percent) while the proportion of juniors and seniors identifying North Campus for most classes was significantly higher (37 percent and 34 percent, respectively, see Table 5).

When asked if they spend more than half their time in a particular campus building other than campus housing, more than half (58 percent) of the undergraduate students and most (83 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, for undergraduates, the Chemistry building and the Shapiro Undergraduate Library were popular locations followed by Duderstadt Center and Angell Hall. Graduate student respondents most often mentioned the Ross Business School building.

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 2. 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 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 Business School, 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 For the most part, the distribution of respondents parallels that of the 2014 student respondents with the largest number of respondents attending classes in the North Campus-North sub-region.

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.

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

¹³ See Appendix F, Figures F3 and F4 for the numbers and spatial distribution student respondents by building, campus region, and sub-region.

Figure 1

2015 STUDENT RESIDENTIAL LOCATION*

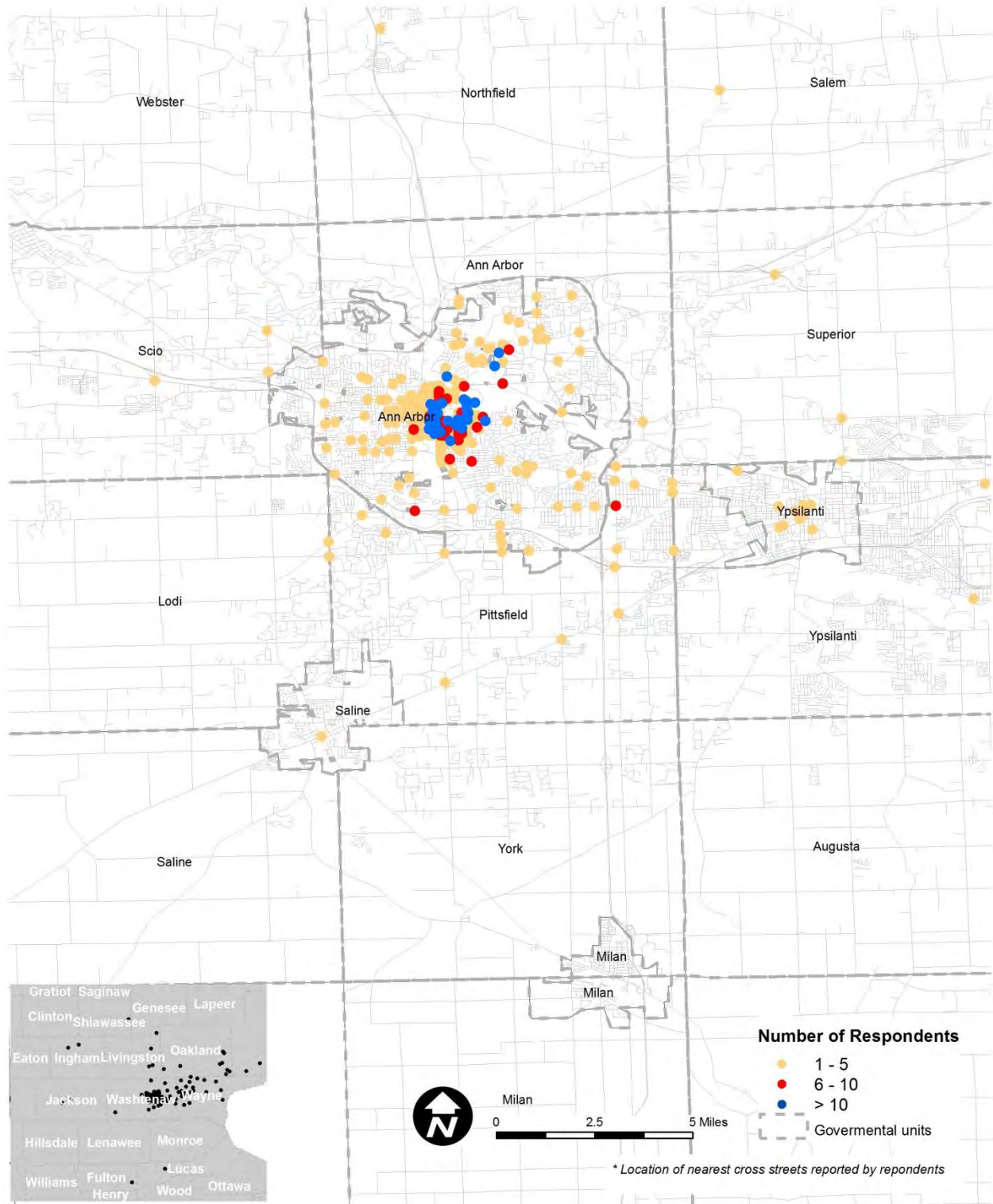


Figure 2

UNIVERSITY OF MICHIGAN CAMPUSES AND REGIONS

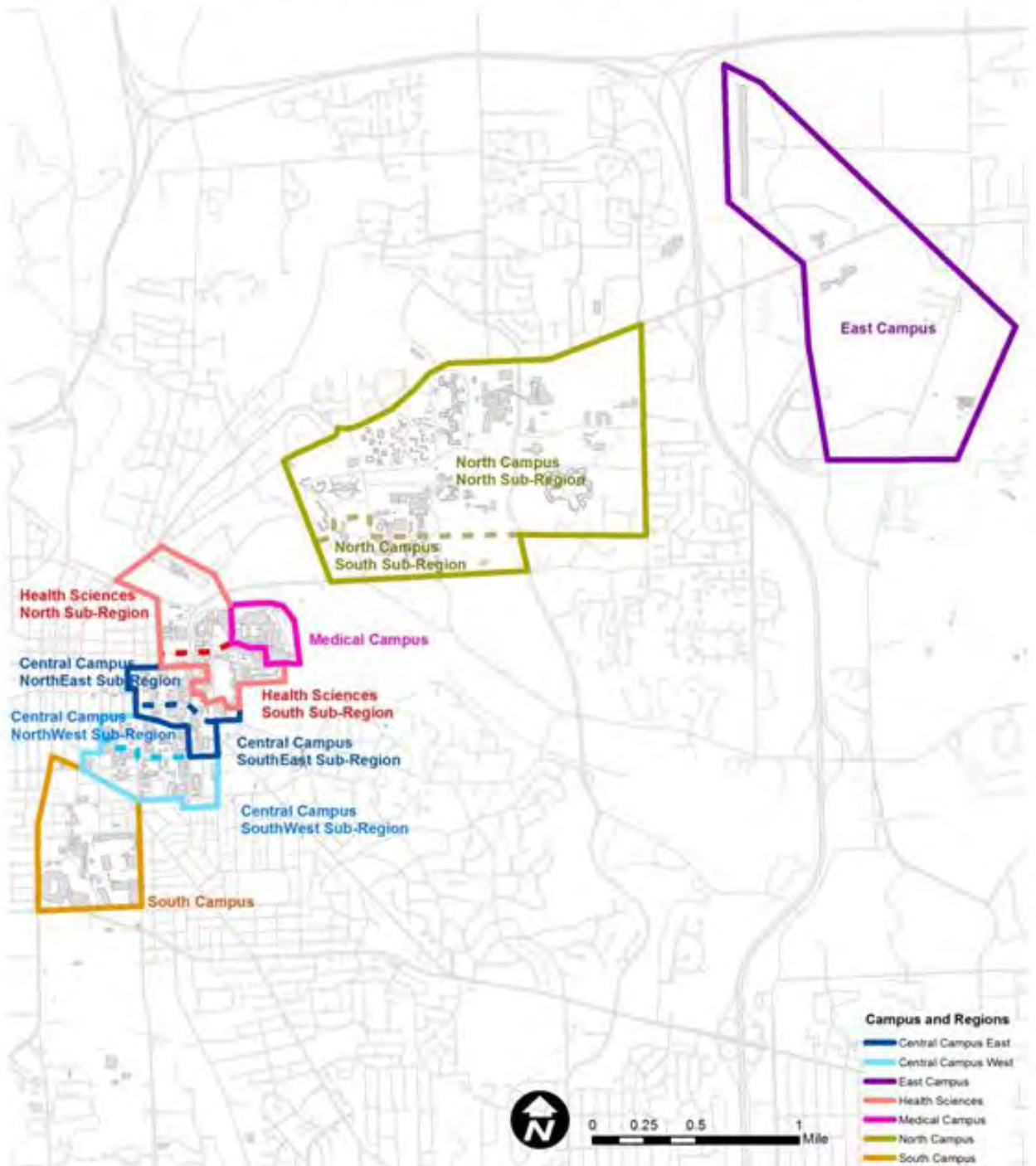


Table 5

STUDENT CLASS/STUDY LOCATIONAL CHARACTERISTICS

(percentage distribution)*

2015	All	Undergraduate Students				All	Graduate Students
	Students	Fresh	Soph	Junior	Senior		
	Location of Most Classes (self-reports)						
Central Campus	71	91	76	62	65	74	68
North Campus	26	8	23	37	34	25	26
Elsewhere	3	1	1	1	1	1	6
Total	100	100	100	100	100	100	100
Number of respondents	2450	1070	322	338	295	2025	425
R spends more than half time in non-residential building?							
No	42	68	62	49	47	56	17
Yes	58	32	38	51	53	44	83
Total	100	100	100	100	100	100	100
Number of respondents	2449	1071	321	338	294	2024	425
Building (non-resid) where R spent most time							
Chemistry	7	17	7	7	6	9	5
Duderstadt Center	6	3	5	12	8	7	5
Ross (School of Business)	6	**	8	6	3	4	7
Angell Hall	5	10	6	7	5	6	3
Shapiro Undergraduate Library	5	8	11	9	7	9	1
School of Public Health	5	0	0	1	0	**	9
Art and Architecture	3	5	6	2	3	4	3
Other bldgs (less than 3%)a	25	15	20	22	31	23	28
Other bldgs (less than 2%)b	18	18	26	22	23	22	15
Other bldgs (less than 1%)c	20	24	11	12	14	16	24
Total	100	100	100	100	100	100	100
Number of respondents	2488	1079	330	345	301	2055	433
a Includes Dana, North Quad, East Hall, Mason, Beyster, Social Work, FXB, South Hall, Hatcher, GG Brown, Education							
b Includes HH Dow, Nursing, Dental, Moore, CC Little, MSRB, MLB, Weill Hall, Union, Chrysler, CCRB, Hutchins, East Quad							
c Includes EECS, Lorch, IST, West Hall, IOE, South Quad, Kraus, Randall							
Location of Building where R spent most time (Campus)							
Central Campus	58	68	63	55	54	59	58
North Campus	29	8	26	37	38	32	26
Medical Campus (including Health Sciences)	12	21	11	8	8	8	15
South Campus	1	3	0	**	0	1	1
East Campus	0	0	0	0	0	0	0
Elsewhere	0	0	0	0	0	0	0
Total	100	100	100	100	100	100	100
Number of respondents	1180	373	127	174	153	827	353
Location of Building where R spent most time (Region)							
Central Campus-West Region	36	46	40	37	32	38	35
Central Campus-East Region	22	22	24	18	22	21	23
Health Sciences Region	11	7	10	6	6	7	15
Medical Campus	1	1	0	2	2	1	**
North Campus	29	21	26	37	38	32	26
South Campus	1	3	0	**	0	1	1
East Campus	0	0	0	0	0	0	0
Elsewhere	0	0	0	0	0	0	0
Total	100	100	100	100	100	100	100
Number of respondents	1180	373	127	174	153	827	353

Table 5 (continued)

STUDENT CLASS/STUDY LOCATIONAL CHARACTERISTICS

(percentage distribution)*

2015	All	Undergraduate Students				Graduate	
	Students	Fresh	Soph	Junior	Senior	All	Students
<hr/> <hr/>							
<i>Location of Building where R spent most time (Sub-Region)</i>							
<hr/> <hr/>							
Central Campus-Southwest	19	14	14	13	13	14	24
Central Campus-Northwest	18	31	26	23	19	24	12
Central Campus-Southeast	15	18	15	12	17	15	14
Central Campus-Northeast	7	5	8	7	5	6	9
Health Sciences- South	7	6	2	2	1	2	12
Health Sciences-North	3	1	9	4	5	4	3
Medical Campus	1	1	0	2	2	1	**
North Campus-North	23	10	17	33	33	26	20
North Campus-South	6	11	9	3	5	7	5
South Campus	1	3	0	1	0	1	1
East Campus	0	0	0	0	0	0	0
Elsewhere	0	0	0	0	0	0	0
Total	100	100	100	100	100	100	100
Number of respondents	1180	373	127	174	153	827	353
<hr/> <hr/>							
<i>Distance between Residence & <u>Campus</u> (sub-region of building where R spends most time)</i>							
<hr/> <hr/>							
Less than .125 mi	2	4	1	2	0	1	2
.125-.249 mi	7	22	18	5	7	11	4
.25-.49 mi	23	28	36	30	24	29	18
.5-.99 mi	22	23	10	22	21	20	24
1.0-1.99 mi	22	19	26	18	24	21	23
2.0-3.99 mi	16	3	8	18	17	13	19
4.0-5.99 mi	2	0	0	1	1	1	2
6.0 mi. or more	6	1	1	4	6	4	8
Total	100	100	100	100	100	100	100
Mean Distance (Miles)	2.3	0.8	0.9	1.7	2.2	1.5	3.0
Number of respondents	1053	351	106	144	135	736	317
<hr/> <hr/>							
<i>Distance between Residence & <u>Building</u> (where R spends most time)</i>							
<hr/> <hr/>							
Less than .125 mi	5	19	8	4	2	7	3
.125-.249 mi	7	16	17	6	4	9	5
.25-.49 mi	22	29	33	33	24	29	15
.5-.99 mi	22	15	12	20	25	19	25
1.0-1.99 mi	24	19	27	23	30	25	23
2.0-3.99 mi	13	1	2	9	8	6	19
4.0-5.99 mi	1	0	0	1	1	1	2
6.0 mi. or more	6	1	1	4	6	4	8
Total	100	100	100	100	100	100	100
Mean Distance (Miles)	2.2	0.7	0.8	1.5	2	1.4	3.0
Number of respondents	1053	351	106	144	135	736	317

** 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.

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 2.2 miles. Undergraduates many or whom live in residence halls traveled less (1.4 miles) while graduate students tend to travel the furthest---3.0 miles on average.

The demographic makeup of the 2015 student respondents was identical to the makeup of respondents in the earlier SCIP surveys. They were nearly equally divided between female and male and 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 2015 survey. More than half of the former indicated they were in professional, administrative, or managerial positions and one in 5 said they were either a nurse or member of the medical staff. Somewhat more than a third of the staff respondents (36 percent) had worked at U-M for more than 10 years and a quarter (25 percent) had been employed by the U-M for 2 years or less.

Among the faculty respondents, nearly half were affiliated the University for a more than a decade whereas 17 percent had been employed for 2 years or less. About a third identified themselves as teaching faculty although a number also mentioned their role as researchers. An additional 1 in 5 were clinical instructors and 8 percent of the faculty respondents were lecturers. Thirty-five percent of them said they were primarily researchers and nearly 4 in 10 faculty respondents were tenured.

As seen in Table 7, faculty members, on average, were twice as likely to live in the Ann Arbor area as staff (80 percent versus 35 percent).¹⁵ In fact, 4 in 10 staff respondents said they lived outside of Washtenaw County. Places of residence of staff and faculty respondents are shown in Figures 3 and 4, respectively.

Table 7 also shows faculty respondents are somewhat more likely than staff to live in a single family house (80 percent versus 72 percent). More than 1 in 5 staff respondents live in an apartment building or a condominium whereas 16 percent of the faculty respondents live in these types of residences. Irrespective of residential type and where they live, more faculty than staff own rather than rent their dwellings (83 percent versus 72 percent).

More than a third of the respondents from both groups lived at their current residence for more than 10 years and each averaged slightly less than 3 persons per household and typically had 2 or 3 cars in the household. For the most part, these finding covering residential characteristics are comparable to those reported in the three previous SCIP surveys.

¹⁴ For students living in residence halls, the precise location of their place of residence is known. For students living elsewhere, 7777they were asked the zip code and the nearest major 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.

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

As in previous surveys, faculty and staff were also asked about the building on campus where they most often worked. Data for the places of employment are shown in Table 8 and cover buildings and the campus, region, and sub-region where those buildings are located.

Table 6

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

2015		Staff	Faculty
<i>Type of Staff</i>			
Professional	26		
Managerial	10		
Administrative	20		
Research	14		
Medical, Nursing	20		
Service	5		
Other	5		
Total	100		
<i>Type of Faculty</i>			
Teaching- Tenured			20
Teaching-Non-tenured			10
Research- Tenured			14
Research-Non-tenured			21
Clinical instructional- Tenured			3
Clinical instructional-Non-tenured			19
Lecturer			8
Other			5
Total			100
<i>Years at U-M</i>			
Less than a year	10	7	
1-2 years	15	10	
3-5 years	20	16	
6-10 years	19	21	
11-20 years	21	24	
More than 20 years	15	22	
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		850	873

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 38 percent of the faculty respondents and half as many staff respondents worked on Central Campus. Significant numbers of both groups also worked on North Campus whereas fewer respondents worked in the less populated South

Table 7

STAFF/FACULTY
RESIDENTIAL CHARACTERISTICS
 (percentage distribution)*

2015	Staff	Faculty
<i>Type of Residence</i>		
Single family house	72	80
2-family house/duplex	3	1
Rowhouse/townhouse	2	2
Apartment building	15	9
Condominium	7	7
Other	1	1
Total	100	100
<i>Place of Residence(locale)***</i>		
Ann Arbor area	35	80
Ypsilanti area	13	5
Other Washtenaw Co. cities, townships, villages	13	6
Other Michigan cities, townships, villages	37	9
Elsewhere	2	**
Total	100	100
<i>Owner or Renter?</i>		
Own	72	83
Rent	26	17
Other	2	**
Total	100	100
<i>Length of Residence:</i>		
Less than a year	12	12
1-2 years	20	14
3-5 years	19	17
6-10 years	14	20
More than 10 years	35	37
Total	100	100
Median Length of Residence (years)	4.8	7.4
<i>Number of Household Occupants</i>		
One	14	13
Two	36	33
Three	21	19
Four	19	24
Five or more	10	11
Total	100	100
Mean Number of Occupants	3.0	3.1
<i>Number of Cars in Household</i>		
None	2	2
One	23	27
Two	51	54
Three	16	13
Four or more	8	4
Total	100	100
Mean Number of Cars in HH	2.2	2.0

***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	812	1071
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Figure 3

2015 STAFF RESIDENTIAL LOCATION*

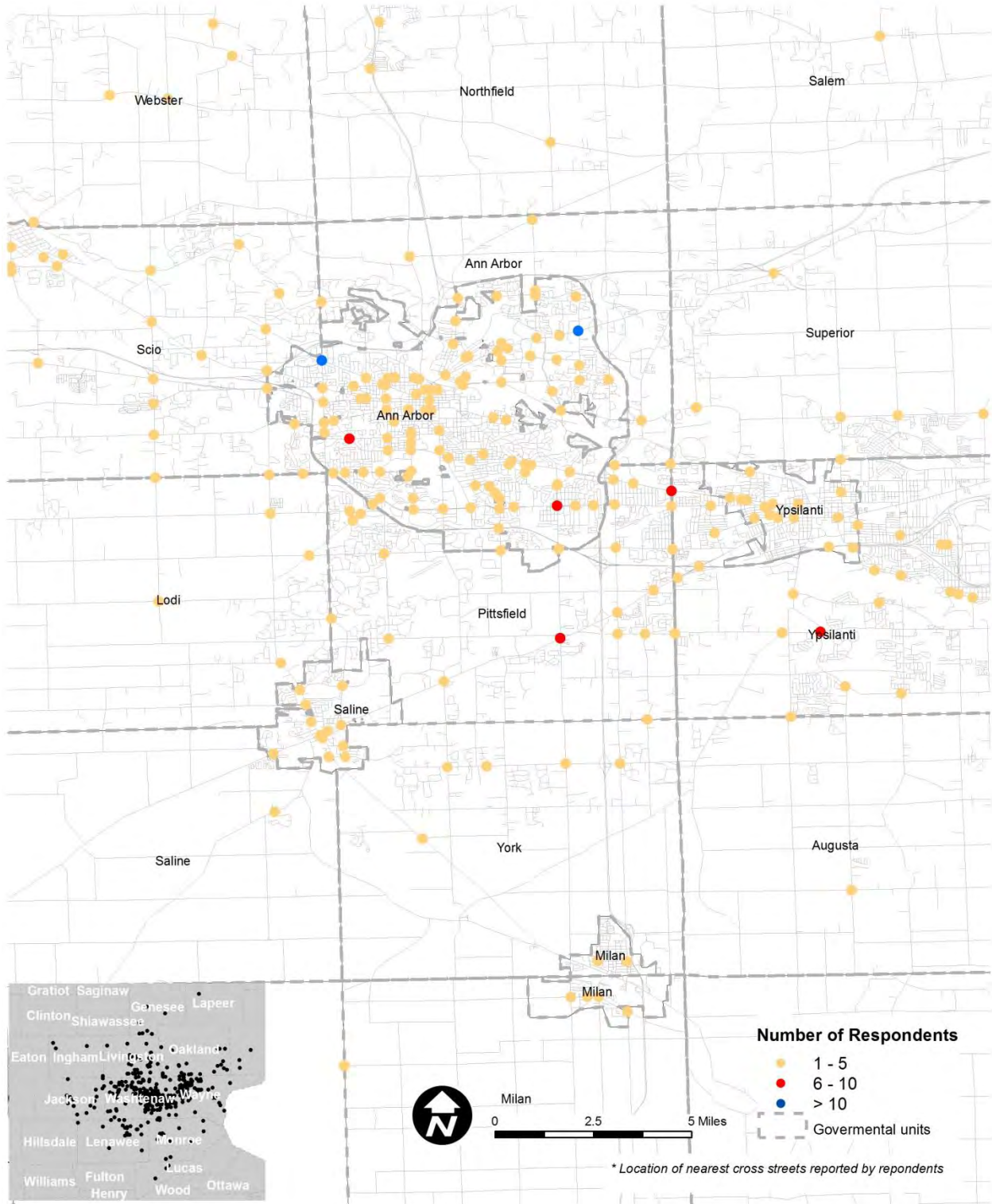
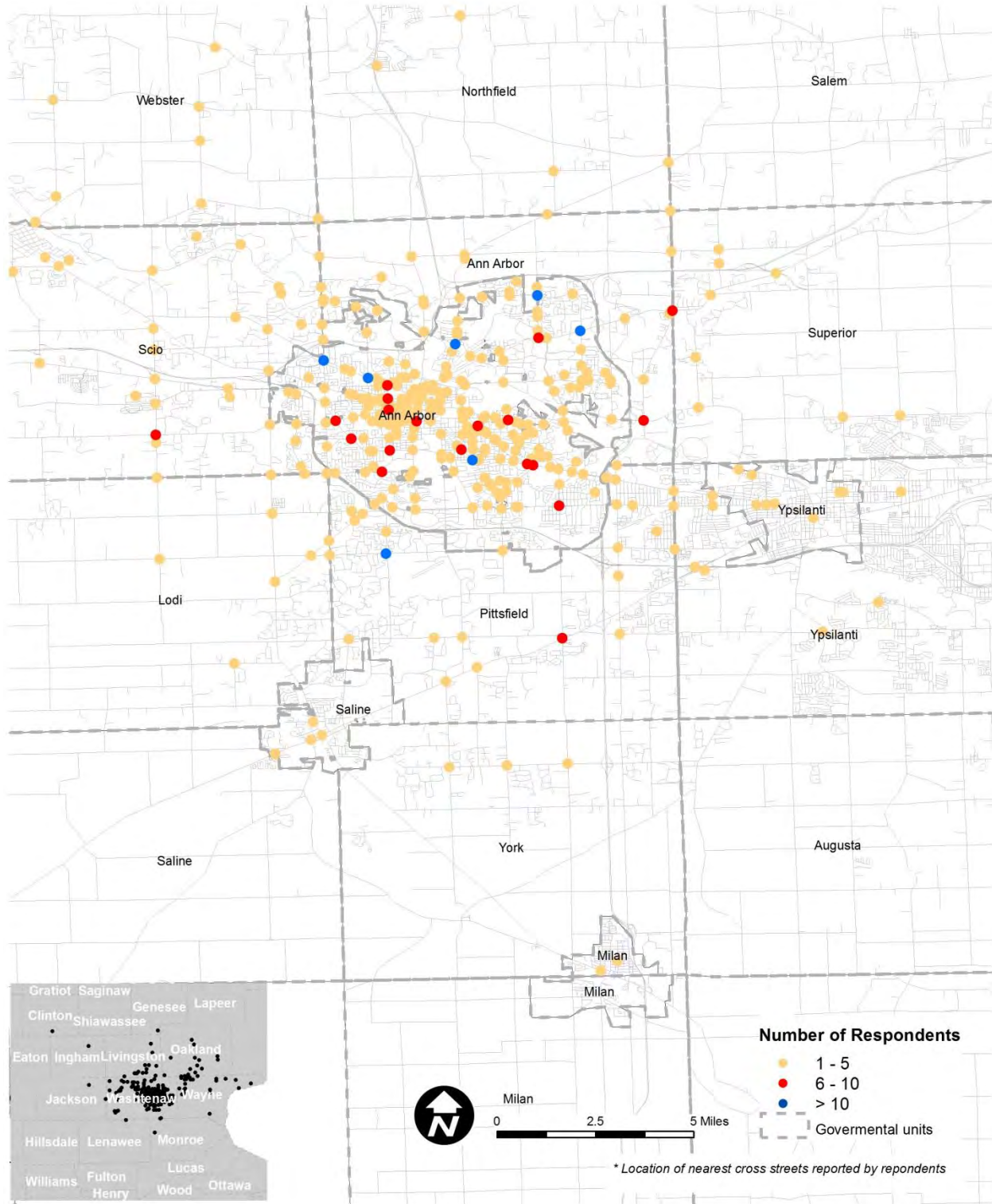


Figure 4

2015 FACULTY RESIDENTIAL LOCATION*



Campus and East Campus. Finally, 7 percent of the staff respondents and one percent of faculty respondents worked off-campus in University-owned or leased space near Central Campus, North Campus, or near Briarwood (i.e. Wolverine Tower).¹⁶

The identification of specific University buildings where staff and faculty worked and their 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 from the 2015 sample show that on average, staff travel more than twice as far as faculty in their journey to work (11.4 miles versus 4.6 miles). Whereas 3 in 10 staff members live within 4 miles of campus, more than two-thirds of the faculty travel this relatively short distance. In contrast, staff respondents are 4 times more likely than faculty to commute more than 15 miles to the University (28 percent versus 6 percent).

Table 8

STAFF/FACULTY
WORK LOCATION CHARACTERISTICS

(percentage distribution)*

2015	Staff	Faculty
<i>Location of Work (Building)</i>		
University Hospital	15	6
Mott Children's Hospital	8	6
North Campus Research Complex	7	3
Domino's Farm	4	1
Taubman Bioscience	2	4
Taubman Health Care Center	4	3
Wolverine Tower	4	0
Medical Science Unit (Med Sic)	2	5
Medical Science Research Building (MSRB)	2	5
East Hall	**	4
Other U-M owned or leased buildings***	52	63
Total	100	100
Number of respondents	779	1086
<i>Location of Work (Campus)</i>		
Central Campus	16	38
North Campus	13	16
Medical Campus (including Health Sciences)	49	41
South Campus	7	1
East Campus	8	3
Elsewhere	7	1
Total	100	100
Number of respondents	779	1086

¹⁶ Appendix F, Figures F5 and F6 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 major 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.

Table 8 (continued)

STAFF/FACULTY
WORK LOCATION CHARACTERISTICS

(percentage distribution)*

2015	Staff	Faculty
<i>Location of Work (Region)</i>		
Central Campus-East	7	17
Central Campus-West	10	22
Health Sciences	13	23
Medical Campus	35	19
North Campus	13	16
South Campus	7	1
East Campus	8	3
Elsewhere	7	1
Total	100	102
Number of respondents	779	1086
<i>Location of Work (Sub-Region)</i>		
Central Campus-Northeast	4	9
Central Campus-Southeast	2	8
Central Campus-Northwest	6	13
Central Campus-Southwest	4	9
Health Sciences- South	6	8
Health Sciences-North	8	15
Medical Campus	35	18
North Campus-North	12	11
North Campus-South	1	4
South Campus	7	1
East Campus	8	3
Elsewhere	7	1
Total	100	100
Number of respondents	779	1086
<i>Distance between Residence & Campus</i> <i>(location of work: Sub-Region)</i>		
Less than 1 mi	5	11
1.0-1.99 mi	7	29
2.0-3.99 mi	18	31
4.0-5.99 mi	11	13
6.0-9.99 mi	17	7
10-14.99 mi	14	3
15-19.99 mi	10	3
20 mi. or more	18	3
Total	100	100
Mean Distance (miles)	11.4	4.6
Number of respondents	559	833

Table 8 (continued)

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

2015	Staff	Faculty
<i>Distance between Residence & Building (where R works)</i>		
Less than 1 mi	5	12
1.0-1.99 mi	7	28
2.0-3.99 mi	18	30
4.0-5.99 mi	11	13
6.0-9.99 mi	17	7
10-14.99 mi	14	3
15-19.99 mi	10	3
20 mi. or more	18	4
Total	100	100
Mean Distance (miles)	11.5	4.6
Number of respondents	596	842

* 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.

***Other U-M owned or leased buildings are those containing less than 2 percent of all employees.

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 graduate or a professional training (see Appendix B, Table B2).

D. 2015 FINDINGS

Section B reviewed the U-M's established goals for 2025 under the themes of *Climate Action*, *Waste Prevention*, and *Healthy Environments*. A fourth goal discussed was creating and enhancing a culture of sustainability on campus under the theme, *Community Awareness*. That is, the University would strive to raise the level of awareness about all aspects of sustainability through various programs and other initiatives targeting its students, faculty and staff.¹⁸ The annual SCIP surveys conducted since 2012 are designed in part to measure movement toward this fourth goal.¹⁹

¹⁸ For discussions of efforts to raise awareness about sustainability, see Shriberg et.al, 2013; Shriberg and MacDonald, 2013; and Marans, Shriberg, and Callewaert, 2014.

¹⁹ Another key purpose of SCIP is to inform the University's leadership and Plant Operations personnel about the effectiveness of their sustainability initiatives.

As in previous SCIP reports, findings for the Year 4 assessment are organized around these four themes and are presented in two ways. First, selected findings from the fall 2015 survey within each thematic area are discussed along with changes, if any, that occurred in survey responses from the baseline year (2012) and in some cases, from the previous year, 2014.²⁰ Second, Sustainability Indicator scores are then presented for Year 4 (2015) as well as the degree to which they differ from previous indicator scores.²¹ Whether or not there are changes in responses to individual questions and the indicator scores reflects the extent to which the culture of sustainability on campus has changed. Furthermore, the amount of change in any score, should it occur, indicates the magnitude of shift toward a sustainability culture. In addition to considering scores for cohorts of students, staff, and faculty, cultural change is examined for individual undergraduate students. These individuals constitute the panel of students that completed the SCIP survey in previous years.

Climate Action

Prior to discussing the actions being taken by students, faculty and staff in dealing with greenhouse gas reductions, consideration is given to their thoughts about and understanding of climate change. In 2013, a new set of questions was asked to determine how the U-M community compares to the population of the U. S. as a whole.²²

As in 2013 and 2014, most respondents believe that climate change is real. Whereas 9 in 10 U-M respondents said that climate change *is happening*, 7 in 10 Americans responded in this manner. A small but significant proportion of the U-M community expressed uncertainty. When asked whether they thought climate change was happening, about one in 20 students and the same proportion of faculty said they “don’t know”. Staff respondents were more uncertain—one in 10 gave this response. Among those who said climate change is happening, 4 in 5 faculty, two-thirds of the students, and more than half the staff said they were “extremely sure” it was occurring.²³ These numbers are significantly higher than the 2013 data with staff members showing the greatest gain (47 percent to 53 percent; $p < .01$) in those saying they were “extremely sure”. Compared to the 2013 student respondents, the 2015 students were more certain that climate change was happening (60 percent to 67 percent; $p < .01$). In particular, the 2015 freshmen were much more certain that climate change was happening than the 2013 freshmen—64 percent of the former were “extremely sure” compared to 48 percent of the earlier cohort.

²⁰ Key findings covering the 2015 questionnaires 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 dealing with the 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. Miscellaneous questions addressing behaviors and opinions are covered in the last table. Distributions of responses to individual questions asked each year are available in a composite working document and can be found on the SCIP website under SCIP Materials. See <http://graham.umich.edu/leadership/scip>

²¹ Sustainability Indicators are composite measures derived from two or more survey questions about a topic or concept. In a few instances, an indicator consists of a single question. We have referred to indicators associated with the themes of Climate Action, Waste Prevention, Healthy Environments, and Community Awareness as primary while the remaining indicators are noted as secondary. Nonetheless, all indicators are viewed as important in defining the culture of sustainability. For a discussion of procedures and items used to create sustainability indicators, see Appendix D.

²² Selected questions were drawn from a 2013 national survey conducted by the Yale Project on Climate Change Communication. The most recent Yale survey offers comparative data to the 2015 SCIP survey (see Leiserowitz, A., Maibach, E., Roser-Renouf, C., Feinberg, G., & Rosenthal, S., 2016)

²³ Respondents in the national sample were not as convinced as the U-M respondents: just 6 in 10 Americans who believed in climate change indicated they were extremely or mostly sure it was occurring.

In order to determine how much they know about climate change, U-M respondents were asked “How well could you explain climate change to someone?” As in previous years, significant numbers of faculty, students, and staff believe they understand the issue. About three-quarters of the faculty and two-thirds of students said they could explain climate change “very well” or “fairly well”. Half of the staff gave these responses.

In the earlier SCIP surveys, faculty respondents were much more likely than students or staff to say that climate change is *caused mostly by human activity*. Findings from the 2015 survey were similar although higher among students. Nearly half of the students (46 percent) gave this response in 2015 compared to 39 percent in 2012 and 43 percent in 2014. The majority of staff (57 percent) and students (50 percent) continue to believe that *climate change is caused by both human activity and natural causes*; 40 percent of the faculty gave this response. Students who participated in the panel were more likely to think that climate change was caused mostly by human activity in 2015 than they were in 2012 (42 percent versus 36 percent).

Finally, members of the university community were of mixed minds when asked about the importance of climate change to them personally. For faculty, two-thirds said climate change was “extremely important” or “very important” while just 6 percent said it was “not too important” or “not at all important”. Students were somewhat more divided in their views; half (50 percent) said climate change was “extremely important” or “very important”, significantly up from 44 percent in 2012 ($p < .01$). At the same time 14 percent said it was “not at all important” or “not too important”. For staff, the feelings were also mixed; 44 percent said it was “extremely important” or “very important” and 15 percent said it was “not too important” or “not at all important”.

Despite strong beliefs in climate change and feelings among many that human activity is its main cause, faculty, staff, and students varied in the manner in which they act to address the challenge. Whereas significant numbers make efforts to decrease their carbon footprint, others do not. For example, almost every faculty respondent (91 percent) said they “always” turned off the lights when leaving their work place. Yet three-quarters of them drive to and from work. Similarly, 90 percent of the students reported turning off lights when leaving a room and 7 in 10 “never” or “rarely” drive a car and park on campus. Yet only half of the students living off-campus adjust their thermostats to conserve energy during cold or hot weather months.

Faculty and staff are more inclined to conserve energy at home. Nearly three-quarters said they set their thermostats to *78 degrees or higher during warm or hot weather* and more than a third said they always *lower their thermostats to 65 degrees or lower in cool or cold weather*. They are also more inclined than students to sometimes or always *use power saving settings on their home computers* (83 percent versus 74 percent) and say they always “limit their time in the shower” (42 percent versus 26 percent).²⁴ For the most part, the distributions of responses to these questions in 2015 are similar to response distributions reported in the preceding three years.

In one item addressing efforts to conserve energy, a significant and positive change was identified. In 2015, a third of the faculty and staff members reported using a motion sensor/“smart” power strip at work “sometimes” or “always/most of the time”. This is an increase from the 2012 data where a quarter of both groups gave this response.

²⁴ Data presented in this section are gleaned for Appendix C, Table 5 (conservation behavior) and Table 2 (travel and transportation behavior). For questions not asked of selected students (e.g. freshmen living in residence hall were not asked about changing thermostat settings), the table report the percentage of “not applicable” responses. In these instances, the percentages reported in the text reflect recalculated distributions without the “not applicable” respondents.

In 2014, new questions of interest to U-M Plant Operations were added to the faculty-staff questionnaire. One asked University employees, “How important is your behavior to conserving energy in the building where you work?” For both the 2015 staff and faculty respondents, nearly 4 in 10 said it was “very important” whereas somewhat more than one in 10 said their behavior was “not that important” or “not important at all” to conserving building energy.²⁵ These findings were comparable to those reported in 2014.

Travel behavior among members of the U-M community continues to be a source of greenhouse gas emissions. As reported in the previous 3 years, about three-quarters of the 2015 staff and faculty respondents said they “always” *drive a car* to their work place or did so “most of the time”. In contrast, the numbers of staff and faculty who said they most often used an alternative mode of travel to get to and from campus were small; less than 10 percent regularly rode an Ann Arbor Area Transportation Authority (AAATA) bus and just 2 percent of the staff said they carpooled. Yet faculty were three times more likely than staff said they most often walked or biked to work (17 percent versus 5 percent).

Despite the predominance of automobile use for work trips, there are encouraging signs that for at least part of the year, staff and faculty partake in other modes when traveling to campus. Although the proportion of faculty and staff who “sometimes” walk or bike to work has not changed since 2012, the numbers of walkers and bikers are not trivial. About 3 in 10 faculty respondents walk to work “sometimes” or “most of the time”. Half as many staff respondents gave these responses. When asked how often they take a U-M bus to work during the past year, 22 percent of the staff and 13 percent of the faculty said “sometimes” or “always/most of the time”. These numbers are significantly higher than what was reported in 2012 (18 percent and 9 percent, respectively). Finally, compared to 2012, there were significantly more faculty and staff that drove to satellite parking and then rode a bus to their workplace in 2015. When asked how often they used *park and ride*, 5 percent of the faculty and 15 percent of the staff said they did so “sometimes or ‘always or most of the time’”. In 2012, just 2 percent of the faculty and 5 percent of the staff gave these responses.

As expected, students were much less likely to drive to campus than faculty and staff. Nonetheless, when asked how they *most often* traveled to/from campus since the beginning of the fall semester, 9 percent of undergraduates and 20 percent of graduate students said they drove a car. More than half (53 percent) typically walked or biked to campus and somewhat over a quarter (28 percent) said they rode the bus.

Two indicators - Conservation Behavior and Travel Behavior – represent summaries of individual actions to address climate change. The 2015 indicator scores indicate virtually no change and suggest that new initiatives are needed to encourage U-M students, staff, and faculty to reduce their carbon footprint.

Conservation Behavior Index. As in earlier years, responses to four questions were combined to create a summary indicator showing the status of conservation behavior among the 2014 student, faculty and staff respondents.²⁶ That is, for each individual respondent, 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 7.0, but lower for staff (6.5) and for students (6.1). The table also presents the distribution of grouped scores (in quartiles) for each respondent



²⁵ Although responses among faculty and staff were similar, differences in responses were found for University employees working in different parts of campus. For example, those working in the Central Campus Southeast sub-region were most likely to say “very important” (45 percent) whereas employees in the Medical Center were least likely to give this response (35 percent). Two other questions addressed staff and faculty awareness of energy consumption and energy conservation features in the building where they worked. Responses to these questions are discussed in the section on Community Awareness.

²⁶ For staff and faculty, the questions asked about their behaviors during the past year while at work whereas students were asked about their behaviors without reference to whether it occurred on campus or elsewhere.

group. When compared to conservation behavior scores from previous years, the actions of U-M students, staff, and faculty to conserve energy are unchanged. Longitudinal data from the 2015 panel of undergraduate students were similar. Specifically seniors in the 2015 panel had a conservation behavior index score of 5.9, with juniors and sophomores showing a slightly higher score of 6.1 (See Table 25). Also, while there was no statistically significant change in this index among the 2012 panel in 2015, freshmen in 2013 showed a significant increase in this index, increasing from 7.6 in 2013 to 8.4 in 2015. Also, freshmen in 2014 showed a significant increase in conservation behavior, with a significant increase in the index score from 7.8 in 2014 to 8.4 in 2015 (see Table 25).

Table 9

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

2015		Students	Staff	Faculty
High (7.51-10)  (5.01-7.50)  (2.51-5.00) Low (0-2.50)		12	21	26
		52	48	54
		31	24	17
Total		100	100	100
Mean Score		6.1	6.5	7.0
Number of respondents (unweighted)		2484	794	1168

Travel Behavior Index. As in previous years, a single question is used to summarize the travel behavior 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 (2015), 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.²⁷ 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.²⁸ 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 (7.6) whereas staff had the lowest score (1.5). Several factors such as the price of fuel, schedule changes in the University and AAATA bus systems, and campus pricing, marketing efforts, and parking policies could alter these scores in the future.

²⁷ Because of the slight difference in wording between the student and faculty/staff questionnaires, it was suggested that comparisons between students and U-M employees may be inappropriate. Accordingly, the 2013 faculty/staff questionnaire asked a second travel behavior question, “Since the beginning of the fall semester, how do you most often travel to/from home to your workplace?” As was demonstrated in 2013, response distributions to the two questions for faculty and staff were identical. Therefore, the 2014 and 2015 questionnaires asked the single question that was asked in 2012.

²⁸ Differentiation was not considered for drivers of electric or hybrid vehicles since the type of vehicle used was not asked in the questionnaires.

When compared to previous years, 2015 indicator scores for travel behavior are fairly comparable for students and staff. The 2015 faculty travel behavior score increased significantly over the past year (1.8 to versus 2.3; $p < .05$), but was comparable to earlier scores reported in 2012 and 2013, an indication that faculty reliance on the personal automobile to get to and from the campus had not changed.²⁹

Table 10

***TRAVEL BEHAVIOR INDICES,
for STUDENTS, STAFF, FACULTY***

(percentage distributions and mean scores)

2015	Students	Staff	Faculty
High (7.51-10)	56	6	17
↑ (5.01-7.50)	27	8	6.0
↓ (2.51-5.00)	5	9	4
Low (0-2.50)	12	77	73
Total	100	100	100
Mean Score	7.6	1.5	2.3
Number of respondents (unweighted)	2482	829	1184

Waste Prevention

Recycling and reuse of materials by U-M faculty, staff, and students continues to play a critical role in the University's efforts to divert waste to disposal facilities. Material reuse also impacts University purchasing decisions. To a large extent, staff and faculty are behaving in an environmentally responsible manner while at work. Similarly, they and U-M students report sound waste reduction practices at home.

Most faculty (91 percent) and staff members (83 percent) said the *always* "recycle bottles, containers, and paper products" during the past year or did so *most of the time* during work.³⁰ Similarly, three-quarters of the staff and faculty group the same response when asked how often they "use a reusable water bottle, coffee cup, or travel mug" Finally, more than 4 in 5 staff and faculty respondents said they either *always* or *sometimes* "print double-sided". Yet, when asked about whether they "use U-M Property Disposition services to obtain items such as computers, furniture, and equipment", just a third from both groups said they *sometimes or regularly* used the services.³¹

A significant number of staff and faculty said they had reduced waste *at home* during the past year. Eight in 10 staff and 94 percent of the faculty said they regularly "recycle bottles, containers, and paper products" while more than 6 in 10 from both groups regularly "recycle their electrical waste". And as in previous years, 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

²⁹ It should be noted that the proportion of faculty respondents living in the Ann Arbor-Ypsilanti area had not changed since 2012.

³⁰ The findings in this section are drawn from Appendix C, Table C5, dealing with waste prevention. Percentages are adjusted to eliminate the not applicable respondents.

³¹ 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*.

were also more likely than staff to *always* or *sometimes* “shop for things with minimal packaging” (65 percent versus 55 percent).

Many students engage in waste reduction activities, but they are not as diligent as staff and faculty. For instance, 67 percent of the students (compared to 78 percent of staff and 94 percent of faculty) said they regularly “recycle bottles, containers, and paper products” during the past year. And 71 percent of the students (compared to 85 percent of the faculty and 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, less than half (47 percent) said *always* or *sometimes* and somewhat fewer (42 percent) said they *always* or *sometimes* “shop for things with minimal packaging”.

Waste Reduction Behavior Index. As in the three preceding years, individual responses to four questions were combined to create a summary indicator showing the status of waste prevention behavior among U-M students, faculty and staff.³² That is, for each 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, 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 is 7.1 and for faculty, it is 7.6; for students, it is 6.9. The table also presents for each group, the proportion of respondents whose scores are high in the top quarter of the index, those with relatively low scores, and the proportion in the middle quarters. For all three groups, waste prevention behavior scores were significantly higher than scores reported in 2012. Longitudinal data from the panel of undergraduate students shows similar trends. Specifically, among undergraduates in the panel who were freshman in 2012, there was a significant increase in the average waste prevention behavior index score, increasing from 6.4 in 2012 to 7.2 in 2015. Similarly, among undergraduates in the panel who were freshman in 2013, there was also a significant increase in the waste prevention behavior index from 6.0 in 2013 to 6.8 in 2015.

Table 11

WASTE PREVENTION BEHAVIOR INDICES,
for STUDENTS, STAFF, FACULTY
(percentage distributions and mean scores)

2015		Students	Staff	Faculty
High (7.51-10)		10.0	27	34
↑ (5.01-7.50)		80	59	60
↓ (2.51-5.00)		10	13	6
Low (0-2.50)		**	1	**
Total		100	100	100
Mean Score		6.9	7.1	7.6
Number of respondents (unweighted)		2484	827	1185
** Less than one half of one percent.				

³² 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, the behaviors may have occurred on campus or elsewhere.

Healthy Environments

Students, faculty, and staff are likely to support U-M's goals of protecting water quality in the Huron River and purchasing or obtaining food from sustainable sources. However, there are few direct actions that students, faculty and staff can take to achieve these goals. Nonetheless, individuals who are part of the University community can act to create healthy environments through their actions at home. Accordingly, questions related to protecting the natural environment at the place where they live and purchasing sustainable foods 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.³³ For faculty and staff who had lawns and did respond, nearly 4 in 10 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; less than 1 in 10 said they used these substances regularly and 20 percent said they sometimes used them. Staff and faculty respondents were significantly less likely to report watering their lawns in 2015 than the 2012 respondents.

Not surprisingly, students living off-campus and responded to the series of questions about lawn care had less of an impact on the environment; about 1 in 10 (11 percent) regularly or sometimes watered the lawn, 7 percent regularly used lawn fertilizers, and just 2 percent said they regularly 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 them to a designated disposal facility" and for students who responded to this question, a quarter had taken this action.

With respect to sustainable foods, questions were asked about household purchases and growing ones' own fruits and vegetables.³⁴ Among the staff and faculty, more than 1 in 5 said he/she (or someone in their household) regularly purchased "locally grown or processed food" during the past year. When asked about the purchase of "organic food", faculty members were somewhat more likely than staff to say they did so *always* or *most of the time* (26 percent versus 17 percent). One in 5 students gave the same response. When asked to estimate how much of their grocery purchases during the past year were sustainable foods, a third of staff and nearly half of the faculty (44 percent) said *all/most* or *more than half* and one in 5 said they *don't know*. Students were somewhat less likely to purchase sustainable foods. One in 4 students purchased sustainable foods at least half of the time and more than a quarter didn't know if they made such purchases.

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, more than 4 in 5 staff and faculty members and 3 in 5 students said *yes*. And about 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. Nearly a third of the students also said they had grown their own fruits and vegetable at home or in a community garden.

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

³³ 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 about lawn care or purchasing sustainable foods.

³⁴ Nearly a 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.

Sustainable Food Purchases Index. This index consists of responses to three questions. Two deal with the frequency of buying “locally grown or processed food” and “organic food” during the past year while the third asks respondents to estimate how much of their food purchases during the previous year consisted of sustainable foods. As shown in Table 12, faculty had the highest index score (6.4) with students being somewhat lower (5.5) on average than staff (5.8). Although differences in mean scores between 2015 and earlier years are modest, there appears to be a shift toward more sustainable food purchases among staff since 2012. The percentage of staff who scored more than 5.0 on the index increased from 70 percent to 77 percent between 2012 and 2015. Among the faculty, 85 percent scored more than 5.0 in 2015 compared 81 percent in 2012.³⁵

Table 12

SUSTAINABLE FOOD PURCHASING INDICES,
for STUDENTS, STAFF, FACULTY
 (percentage distributions and mean scores)

	2015	Students	Staff	Faculty
High (7.51-10)		17	20	26
↑ (5.01-7.50)		50	57	59
↓ (2.51-5.00)		25	19	14
Low (0-2.50)		8	4	1
Total		100	100	100
Mean Score		5.5	5.9	6.4
Number of respondents (unweighted)		1015	802	1155

Protecting the Natural Environment Index. This 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 dealt with the frequency of watering lawns, using fertilizers, and using herbicides or pesticides during the past year. Table 13 shows that students have the highest index scores (8.8) whereas faculty respondents have the lowest (6.4). The index score for staff is slightly higher than the 2013 score and significantly higher for faculty (6.4 versus 6.1; $p < .05$). However, the score for students is about the same as it was in previous years.

The index scores for students who participated in the panel generally increased over time on this index. However, due to the small number of freshman panel members answering these questions the statistical significance of change over time was not examined. Descriptive examination of the panel data show that more recent cohorts of undergraduates in the panel, specifically those who were freshmen in 2013 and also 2014 start off low on this index at 6.7 and 7.3 respectively, and then showed increases up to 9.5 and 9.3 in 2015. Without further analysis, it is unclear whether these differences reflect a concern for protecting the environment, a laissez faire attitude about property maintenance, time limitations, indifference about the appearance of one’s property, or a change in the type of their off-campus housing.

³⁵ Sustainable food purchases by students remained fairly constant between 2012 and 2015. .

Table 13

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

(percentage distributions and mean scores)

2015	Students	Staff	Faculty
High (7.51-10)	82	50	48
↑ (5.01-7.50)	5	19	24
↓ (2.51-5.00)	9	20	17
Low (0-2.50)	4	11	11
Total	100	100	100
Mean Score	8.8	6.7	6.6
Number of respondents	495	667	1004

Community Awareness

As part of the U-M's guiding principle within the Community Awareness theme, the University intends to "pursue strategies toward creating a campus-wide culture of sustainability." Since the initial SCIP surveys in 2012, questions have been asked about awareness of travel and transportation options, waste prevention practices, protecting the natural environment, sustainable foods, and climate change. In 2014, two awareness questions were added to the faculty/staff questionnaire dealing with energy conservation in their respective buildings. Finally, all respondents have been asked since the inception of SCIP how much they know about specific actions being taken by the U-M in each of these domains.

Sustainable Travel and Transportation. With few exceptions, 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 the AAATA a third of the faculty said they know "not much or nothing", somewhat under a third said "a little" and the remainder (40 percent) said they know "a lot" or "a fair amount." Staff respondents were more equally divided between these response categories. Students tend to know somewhat more about AAATA; 45 percent said they know "a lot" or "a fair amount". Graduate students know more about AAATA than undergraduates 57 percent versus 36 percent). Whereas awareness of AAATA among faculty and staff has not changed over the 3-year period, students in 2015 are significantly less likely to know about public transportation than students in the 2012 sample.

Staff and faculty for the most part are 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 a third (32 percent) of the student body that gave these responses.

As in earlier surveys, few respondents knew about Zipcars (an hourly car rental), Vanpools, ExpressRide, and Greenride/iShareaRide (a U-M carpooling network). One in 10 staff and faculty and 12 percent of the student body know "a lot" or "a fair amount" about Zipcars whereas the proportion knowing about other transportation options is even smaller.

In 2015, a bike sharing program was introduced in central Ann Arbor. As part of the fall 2015 survey, respondents were asked how much they knew about this new University-City program call “Arbor Bike”. Students tended to know somewhat more about the program than staff or faculty. Overall, just one in twenty from the three groups said they know “a lot” or “a fair amount” about Arbor Bike.

As noted, low levels of awareness of these modes of transportation have not changed since 2012. However, staff respondents tended to know significantly more about Greenride/iShareaRide in 2015 than they knew in 2012 ($p < .001$). In 2012, just 8 percent indicated some level of awareness; in 2015, that number increased to 16 percent.³⁶ There was also a significant increase in awareness of Greenride/iShareaRide among faculty respondents. Just 4 percent know about it in 2012 whereas 10 percent said they know something about it in 2015.

Waste Prevention. Staff, faculty, and students varied in the degree to which they understand or know about recycling. Approximately half of the respondents from each group said they knew “a lot” or “a fair amount” about *recycling glass* while higher proportions gave these responses when asked about *recycling plastic*. Even more respondents expressed an awareness of *paper recycling*. Nearly three-quarters of faculty members and staff said they know “a lot” or “a fair amount” and two-thirds of the students gave these responses to the question about recycling paper. With the exception of faculty respondents who said they knew significantly more about recycling both plastic and glass than the 2012 respondents, the proportions were comparable to those reported in previous years.

In 2014, awareness of composting was added to the questionnaires for student, faculty and staff. At that time, about one in 7 from each group said they know “a lot” or “a fair amount” while the majority from each group said they know “a little” or “not much/nothing” about composting. Whereas the same proportion in each group gave these responses in 2015, there was a small but significant tilt among the 2015 students toward a greater understanding of composting.

As in previous years, the 2015 respondents knew considerably little about recycling electronic waste and the U-M’s Property Disposition services. Whereas more than a third of staff-faculty respondents said they know “a lot” or “a fair amount” about *recycling electronic waste*, just one-fifth of the students gave these responses. Students too tended to be unaware of the services of Property Disposition. Only 13 percent said they know “a lot” or “a fair amount” about it whereas nearly 40 percent of the staff and faculty gave these responses when asked about the U-M’s *Property Disposition services* in 2015.

Protecting the Natural Environment. Knowing about ways to protect the natural environment differs greatly within each group. For instance, nearly half of the 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; yet one in 7 responded “not much or nothing”. Students know even less; a quarter said they know “not much or nothing” and more than a third said they know “a little”. These levels of understanding were comparable to those found in the 2012 sample.

Nearly half of staff and faculty indicated that they know “a lot” or “a fair amount” about *taking care of residential property in an environmentally-friendly way* whereas more than a third of the students gave these responses. However, compared to the 2012 students, those who responded in 2015 were significantly more likely to know about “taking care of residential property in an environmentally-friendly way” (36 percent versus 30 percent; $p < .01$). Furthermore, they were more likely than the 2012 students to say they “recognize invasive plant species”. Yet, less than 1 in 5 said they know “a lot” or “a fair amount”. The inability of staff and faculty to recognize invasive plant species was also evident. About

³⁶ These are respondents who said they know “a lot”, “a fair amount”, or “a little” about Greenride/iShareaRide.

4 in 5 staff respondents said they know “a little” or “not much or nothing” about *recognizing invasive plant species* while 7 in 10 faculty gave these responses (85 percent).

Finally, staff and faculty respondents knew more than students about *disposing of hazardous waste materials*. More than 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 indicated they know “a little” or “nothing” about hazardous waste disposal outnumbered those knowing “something” by 3 to 1.

Sustainable Foods. Within the context of SCIP, Sustainable foods is 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 and staff said they know “a lot” or “a fair amount” about *locally grown or processed food* compared to half of the students. Similarly, three-quarters of faculty members know “a lot” or “a fair amount” about *organic foods* compared 68 percent of the staff and 58 percent of student respondents.

For other types of sustainable foods, there were substantial numbers from each respondent group who said they know “not much or nothing”. For faculty, this response ranged from 5 percent to 13 percent. For staff, the range was 11 to 25 percent, and among students, between 13 percent and 29 percent said they know “not much or nothing” about the other types of sustainable food.

Despite these proportions indicating a limited understanding of various types of sustainable foods, there is a general increase in understanding what is meant by sustainable foods since 2012. For example, the 2015 student sample knows significantly more than the 2012 students about “fair trade foods”, “food from humanely-treated animals”, “grass-fed beef”, and “fish from sustainable fisheries”. The 2015 staff respondents also know significantly more than those who responded in 2012 about “grass-fed beef” and “fair trade food” while faculty overall have a greater understanding of “food from humanely treated animals” and food from animals not given hormones or antibiotics”.

Building Energy Conservation. In 2014, two awareness questions were added to the staff/faculty questionnaire. The questions were intended to find out how much U-M employees knew about energy consumption and the University’s energy reduction features in the particular building where respondents worked. When asked about energy use in their buildings in 2015, less than one in 5 (18% of faculty and 16 percent of staff) said they know “a lot” or “a fair amount”. The numbers were equally low when asked about the energy conservation features in the respondents’ buildings. Just 20 percent said they know “a lot” or “a fair amount” whereas nearly half said they know “not much or nothing at all”. These percentages were about the same as in 2014.

Awareness Indices. In the first year of SCIP, separate awareness indicators were developed for Sustainable Travel and Transportation, Waste Prevention, Natural Environment Protection, and Sustainable Foods. For each, index scores were created for each respondent by summing responses to all items within the domain.³⁷ 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

³⁷ The Sustainable Travel and Transportation Awareness Index has 4 items: knowledge of AAATA, 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.

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 same procedure was followed in subsequent years. The distribution of index scores for 2015, based on a standardized or common scale, together with the mean values are shown in Tables 14 through 17 for students, staff, and faculty.

Table 14

SUSTAINABLE TRAVEL AWARENESS INDICES,
for STUDENTS, STAFF, FACULTY
 (percentage distributions and mean scores)

2015	Students	Staff	Faculty
High (7.51-10)	5	3	4
↑ (5.01-7.50)	22	14	19
↓ (2.51-5.00)	43	33	32
Low (0-2.50)	30	50	45
Total	100	100	100
Mean Score	4.1	3.1	3.5
Number of respondents (unweighted)	2475	824	1183

Table 15

WASTE PREVENTION AWARENESS INDICES,
for STUDENTS, STAFF, FACULTY
 (percentage distributions and mean scores)

2015	Students	Staff	Faculty
High (7.51-10)	7	16	20
↑ (5.01-7.50)	26	32	33
↓ (2.51-5.00)	42	35	33
Low (0-2.50)	25	17	14
Total	100	100	100
Mean Score	4.1	4.9	5.3
Number of respondents (unweighted)	2487	829	1184
** Less than one half of one percent.			

Table 16

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

(percentage distributions and mean scores)

2015			
	Students	Staff	Faculty
High (7.51-10)	5	9	11
↑ (5.01-7.50)	16	25	24
↓ (2.51-5.00)	32	32	36
Low (0-2.50)	47	34	29
Total	100	100	100
Mean Score	3.4	4.2	4.5
Number of respondents (unweighted)	2486	828	1184

Table 17

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

(percentage distributions and mean scores)

2015			
	Students	Staff	Faculty
High (7.51-10)	14	18	26
↑ (5.01-7.50)	31	33	38
↓ (2.51-5.00)	34	34	27
Low (0-2.50)	21	15	9
Total	100	100	100
Mean Score	4.7	5.2	6.0
Number of respondents (unweighted)	2488	829	1185

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 sustainable foods, students know the least (4.7) whereas faculty members are most knowledgeable (6.0).

Levels of awareness about sustainability, based on index scores have tended to fluctuate over the first four years of SCIP. Although some improvements were reported between 2012 and 2014, these improvements were not sustained. For example, significant increases in awareness of waste prevention practices were reported between 2012 and 2014 for students and faculty. However, the indicator scores in 2015 for students and faculty declined. Nonetheless, there was a significant increase in awareness of sustainable foods over the four years among all segments of the University's population. At the same time, there was a decline in student understanding of travel and transportation options in Ann Arbor. Their awareness scores decreased from 4.4 in 2012 to 4.1 in 2015 ($p < .001$).

Indicator scores for the panel of students that participated in the surveys each year suggest a somewhat different picture. Specifically, among the 2015 seniors who participated in the previous three years, their awareness indicator scores for travel and transportation, waste prevention, and sustainable foods increased significantly. For instance, their travel and transportation scores increased annually from 4.0 in 2012 to 4.9 in 2015 while their waste prevention scores increased from 4.0 in 2012 to 4.5 in 2015. . Similarly, awareness of sustainable foods increased from 4.1 in 2012 to 5.0 in 2015. The data clearly show that, the longer students are on campus, the more they know about transportation in Ann Arbor, and generally about waste prevention and sustainable foods. Without further analysis, it is unclear whether changes for individual students are attributable to their intrinsic interest in sustainability, to U-M's efforts to raise levels of awareness, or other factors.³⁸

U-M Sustainability Initiatives. In previous years, 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*. Questions about people's understanding of these sustainability initiatives were repeated in the 2015 surveys.

In 2015, members of the University community were most likely to be "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). The 2014 and 2015 questionnaires also asked respondents about the University's efforts to promote composting, a relatively new initiative on campus. More than three in 10 students said they were "very aware" or "somewhat aware" and a quarter of the staff and faculty gave these responses about composting.

In general staff tended to be more aware of U-M's sustainability initiatives than faculty or students. For instance, relatively high levels of awareness were reported by staff for *encouraging people to take a bus or bike and promoting ride-sharing*. Unlike previous years, staff respondents were less aware than faculty of the University's efforts to conserve energy. In fact, only 65 percent of 2015 staff respondents said they were "very aware" or "somewhat aware" compared to 71 percent in 2012 ($p < .01$).

The 2015 students were also less likely to know about U-M's efforts to *conserve energy than the 2012 students*. At the same time, they were less aware than staff or faculty to know about initiatives to *promote ride-sharing and recycling* but more aware than others about U-M's work to *promote food from sustainable sources*.

U-M Sustainability Initiatives Awareness Index. This indicator was developed in 2012 using a similar approach to that employed in creating the other awareness indicators. The process was repeated with the 2015 data. Mean scores were then calculated for students, staff, and faculty and are shown in Table 18. The Table clearly indicates that staff respondents were most knowledgeable about what the U-M was doing about sustainability (5.3) whereas faculty and students were less knowledgeable (5.1 each).

³⁸ The panel data reported here cover 108 undergraduate students who participated in the 2012, 2013, 2014 and 2015 surveys. Additional panel data are available for students who participated in 2012 and 2015 but did not participate in 2013 and/or 2014. The analysis of indicators for these 298 students reveal patterns of behavior and their levels of awareness similar to panel members who participated in all four years. Data covering a new panel of students, that is, the 2014 freshmen who participated in 2015 are also available. With few exceptions, differences in indicator scores for these students between 2014 and 2015 are comparable to differences in indicator scores for the 2012 freshmen. For instance, the newest panel of students showed a significant increase in their waste prevention behavior from their freshman to sophomore years compared to a slight but no change among the earlier panels. At the same time, the new panel was significantly more aware of travel and transportation options than the earlier panel members. Continuing SCIP surveys will enable us to examine, over time, student changes in behaviors and awareness as the move from their first year on campus to their sophomore year and beyond (See Appendix Table E5).

Table 18

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

(percentage distributions and mean scores)

2015	Students	Staff	Faculty
High (7.51-10)	13	14	11
↑			
(5.01-7.50)	38	38	36
↓			
(2.51-5.00)	34	33	40
Low (0-2.50)	15	14	13
Total	100	100	100
Mean Score	5.1	5.3	5.1
Number of respondents	2471	825	1173

A comparison of the 2015 indicator scores with those from earlier samples indicate that levels of awareness among students and faculty about U-M's sustainability initiatives have not changed. Similarly, staff awareness which had increased significantly from 2012 to 2013 dropped back to the 2012 levels in 2015.

Even among all undergraduate students participating in the panel, the overall level of awareness of the University's campus sustainability activities have not changed since 2012.

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. These dimensions of sustainability culture were measured 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 pro-environmental 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 collectively. In order to determine how much of this occurs on campus, respondents were asked whether or not they had participated in a U-M sustainability organization, in campus events including a *Planet Blue Open House*, *Earthfest*, *RecycleMania*, and in other events dealing with *Zero Waste* or *e-Waste Recycling*, and the *Planet Blue Ambassadors Certificate Program*. Staff and faculty were also asked about their engagement in the *Sustainability Workplace Certificate Program* while students were asked if they had participated in the *Kill-a-Watt program* and if they had taken a *U-M course that addressed sustainability*.³⁹

³⁹ In anticipation of measuring increases in the number of people who engage in each activity each year in future SCIP surveys,, two questions were asked in the 2015 questionnaires. The first and new question was: "During the past year, did you participate in?" If the answer was *No*, the respondent was asked the previously used question, "Have you ever participated in....?" Respondents who said *Yes* to either the first or the second question could then be compared with respondents from the earlier

The numbers of faculty, staff, and students that said they had ever participated in one of these activities or events increased significantly between 2012 and 2015. Although the numbers of participants remain relatively low-- no more than a quarter from any group said they had engaged in an activity—an increasing number from the University community are involved in sustainability. Faculty and staff members were most engaged through their participation in an *e-Waste Recycling event* where 1 in 4 responded affirmatively. For each of the remaining U-M events or activities included in the questionnaires, less than 20 percent of the faculty and staff gave an affirmative answer when asked whether or not they participated. As was demonstrated in the earlier surveys, U-M students tend to be more engaged than staff or faculty but also with low levels of involvement. In fact, less than 1 in 5 (18 percent) said they participated in a *sustainability organization on campus* and a quarter said they had taken a *course addressing sustainability*.

It is encouraging to see significant increases in engagement among the student body compared to earlier years. Besides a greater number reporting organizational involvement and sustainability coursework, student participation in a Zero Waste event nearly doubled (from 4 percent to 8 percent) between 2012 and 2015 while those who said they attended Earthfest increased from 9 percent in 2012 to 14 percent in 2015. Faculty and staff also reported more participation in sustainability activities than in previous years. Involvement in the Planet Blue Ambassadors Program increased significantly since its initial year 2013 from 6 percent to 17 percent for staff and from 3 percent to 13 percent for faculty ($p < .001$). Similarly, faculty participation in an e-Waste Recycling event increased from 19 percent in 2012 to 21 percent in 2013 to 27 percent in 2015 ($p < .05$). Finally, there was a significant increase in staff participation in the Sustainability Workplace Certificate Program from 5 percent in 2013 to 10 percent in 2015 ($p < .01$)⁴⁰

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, the level of engagement for all respondents was relatively low with students having a mean value of 1.6 and staff and faculty having a value of 0.7 each.⁴¹

surveys where the “Have you ever participated in?” question was asked. The percentages responding *Yes* to the first set of new questions are shown in Appendix Table C14.

⁴⁰ As we will see momentarily, faculty and staff participation in the Sustainability Workplace Certificate Program and the Planet Blue Ambassadors Program significantly improved a number of behavioral and awareness indicator scores.

⁴¹ Alternative indices have been created that take into account questions about participation in the Planet Blue Ambassadors Certificate Program (for students, staff and faculty) and the Sustainability Workplace Certificate Program (for staff and faculty). These alternative indicators will be discussed in subsequent reports.

Table 19

U-M SUSTAINABILITY ENGAGEMENT INDEX,
BY STUDENTS, STAFF, FACULTY

(percentage distributions and mean scores)

2015	Students	Staff	Faculty
High (7.51-10)	3	7	3
↑ (5.01-7.50)	6	9	2
↓ (2.51-5.00)	10	15	5
Low (0-2.50)	81	69	90
Total	100	100	100
Mean Score	1.7	1.2	1.1
Number of respondents	2451	809	1162

However, when comparing engagement scores for each group on campus between 2012 and 2015, there were significant increases. Students' overall engagement score showed an increase from 1.3 in 2012 to 1.7 in 2015 ($p < .01$). Students who participated in the panel over the four years were more engaged in 2015 than in previous years. Their U-M Sustainability Engagement Index scores increased from 1.6 in 2012 to 2.9 in 2015 ($p < .001$).

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 during the past year 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, less than half (45 percent) answered "yes" when asked whether they had given money *to an organization or advocacy group* during the past year and 52 percent answered affirmatively when asked whether or not they *voted for a candidate for public office because of his/her position* during the same period. On the other hand, only 1 in 10 had volunteered for an *environmentally-related organization or advocacy group*. Whereas volunteerism among the faculty remained constant over the 4 years of SCIP, faculty environmental donations and voting for a pro-environmental candidate declined since 2012.

For staff, a quarter had contributed money while nearly 4 in 10 (37 percent) 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 less likely than students to say they had *volunteered for an organization or advocacy group* or *served in a leadership position in such an organization*. These staff numbers have been fairly consistent since 2012.

As in the past, roughly a quarter of the 2015 students contribute both time and money to support sustainability. Nearly a fifth said they had *given money to an environmental organization* and a quarter

said they had *volunteered for an organization or advocacy group during the past year*. Students who reported voluntary activity during the past year increased to 25 percent from 22 percent in 2012 ($p < .01$) while voting for a pro-environmental candidate increased significantly since 2012 from 22 percent to 28 percent ($p < .05$).

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 relatedly 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,
BY STUDENTS, STAFF, FACULTY

(percentage distributions and means)

2015	Students	Staff	Faculty
High (7.51-10)	3	2	2
↑			
(5.01-7.50)	5	4	5
↓			
(2.51-5.00)	13	16	28
Low (0-2.50)	79	79	65
Total	100	100	100
Mean Score	2.0	1.8	2.7
Number of respondents	2487	823	1182

When comparing general engagement on sustainability issues between 2015 and earlier years, there were no significant changes among staff and faculty. However, engagement among students increased over the year from 1.8 to 2.0 ($p < 0.05$). This increase occurred despite a decline in the General Sustainability Engagement score between 2013 and 2012.

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?”⁴²

Faculty members were most committed to sustainability with more than a quarter of them saying they were *very committed*. Nearly a fifth (18 percent) of the students and 14 percent of staff gave this response. While the majority of respondents from each group said they were *somewhat committed*, there was a sizable 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 25 percent of the student body indicated they were uncommitted. Graduate students were more committed than undergraduates; 81 percent of the former said

⁴² For a complete list of responses to both questions for each student cohort and for staff and faculty, see Appendix C, Table 16.

they were *very committed* or *somewhat committed to sustainability* compared to 71 percent of undergraduates.

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. More than half of the faculty said that various forms of media (newspapers, TV, books, etc.) had the greatest impact on their views and commitment to sustainability. Media was also mentioned by nearly half of the staff and a quarter of the student respondents. Friends, classmates, and family were also identified as most influential in shaping the views of students. As in previous years, the influence of U-M professors and instructors on student views increased in importance for each cohort of undergraduates. Among all students, 12 percent said that their U-M professors or instructors were most influential in shaping their views about sustainability compared to 10 percent who credited this group two years earlier.

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 respondents.

Table 21

***COMMITMENT INDEX SCORES,
by STUDENTS, STAFF, FACULTY***

(percentage distributions and mean scores)

2015		Students	Staff	Faculty
High	(7.51-10)	19	14	28
	(5.01-7.50)	57	66	61
	(2.51-5.00)	21	18	11
Low	(0-2.50)	2	2	1
Total		100	100	100
Mean Score		6.5	6.4	7.2
Number of respondents		2480	826	1181

For students as a whole, the 2015 indicator scores reflect a slightly but significantly higher level of commitment to sustainability over the past four years. This higher level of commitment over time is highlighted by panel data show an increase among students who participated in the SCIP surveys in multiple years. For the 108 students who responded each year since 2012, the score increased for 6.5 to 6.9. Among the panel of students who entered the University a year later (2013), their scores averaged 5.9 during their first year on campus and 6.2 at the beginning of their junior year ($p < .05$). The 2014 freshmen scores averaged 6.1 compared to their 2015 average of 6.5 ($p < .05$). For staff and faculty, the commitment index scores are comparable over the four years of SCIP.

Dispositions. In addition to behavioral, awareness, and commitment questions, another category of questions asked respondents about their dispositions and related attitudes. Disposition questions were asked in several modules of the questionnaires and covered topics such as asking respondents why they engaged in selected behaviors --- for example, identifying the primary reason a faculty or staff member drives to work or moved to their current residence. 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, 12, and 16.

One set of disposition questions reveals interesting change scores between 2012 and 2015 for students and faculty but not for staff. When asked about the importance of the *being able to walk or bike to work/campus*; *being able to take the bus to places besides work/campus*; and *having a lower impact on the environment*, results for students and faculty all showed statistically significant increases for those who reported “very important” and “somewhat important.” Results for staff were relatively unchanged.

Regarding the primary reason faculty or staff drive a car to work (rather than taking public transit, carpooling or biking/walking) results remained consistent between 2012 and 2015. For faculty, the primary reason was “convenience”. Approximately 3 in 10 faculty gave this response each year. For staff, the primary reason was “length of commute.” Four in 10 staff gave this answer in 2015 which was slightly higher than previous years. These results can provide important insights for developing strategies to encourage less individual car use.

Regarding future scenarios, student results remained consistently high with 9 in 10 students noting that *being able to walk, bike, or take the bus to place from where they live* would be “very likely” or “somewhat likely” priorities for them in the future. Similar results were found for *buying sustainable food* and *conserving natural resources*. Statistically significant increases between 2012 and 2015 were found for *taking care of your home and property in environmentally-friendly ways* (nearly 9 in 10 students answering “very likely” or “somewhat likely” in 2015) and *reducing your greenhouse gases as much as possible* (8 in 10 students answering “very likely” or “somewhat likely” in 2015).

Disposition Index. Responses to the willingness to pay questions were quantified and the values were recalculated for the 0 to 10 scale. Table 22 shows that in 2015, as in 2012, faculty respondents appear to be more disposed than students and staff to pay for the U-M sustainability initiatives. However, scores were lower in 2015 than in 2012 for all three groups. Differences in 2015 scores from 2012 were statistically significant faculty and staff (faculty and staff, $p < .01$) but not for students.

Table 22

DISPOSITION TOWARD SUSTAINABILITY INDEX,
BY STUDENTS, STAFF, FACULTY

(percentage distributions and mean scores)

2015		Students	Staff	Faculty
High	(7.51-10)	11	9	28
	(5.01-7.50)	14	8	17
	(2.51-5.00)	29	20	20
Low	(0-2.50)	47	63	35
Total		100	100	100
Mean Score		3.4	2.5	4.8
Number of respondents (unweighted)		2482	813	1157

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 indicating some level of awareness of each of eight initiatives, they were then asked to rate or grade its success or performance in both years. Findings for the 2015 survey are shown in the second part of Appendix C, Table C15 and reveal that, on average, respondents tended to give the University “fair” to “good” grades. Highest grades were given to *promoting recycling* whereas relatively low grades were given to *promoting composting*.⁴³

Although ratings of U-M sustainability activities in 2015 tend to be comparable to those reported earlier, ratings of selected activities significantly changed from those reported in earlier surveys. For example, students gave poorer grades to U-M's efforts to conserve energy, to promote ride-sharing and recycling, and to maintaining grounds in an environmentally-friendly manner. Staff too gave significantly poorer ratings to the University for its recycling initiatives. The 2015 faculty respondents however gave significantly higher marks to the University for promoting sustainable foods.

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.⁴⁴ Table 23 shows that, the overall performance ratings of the U-M's sustainability initiatives were fairly comparable for the 2015 samples. Current scores are comparable to the 2012 scores for faculty, staff, and students. but For students participating in the panel, their ratings were lower in 2015 than in 2012 (6.5 versus 7.0; $p < .05$).

Table 23

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

(percentage distributions and mean scores)

2015		All Students	Staff	Faculty
High	(7.51-10)	24	25	20
	(5.01-7.50)	59	56	60
	(2.51-5.00)	16	18	19
Low	(0-2.50)	1	1	1
Total		100	100	100
Mean Score		6.7	6.7	6.5
Number of respondents (unweighted)		2013	618	858

Summary

Table 24 summarizes the 2015 indicator mean scores and changes, if any, for students, staff, and faculty. The table reveals several things similar to what was found in earlier years. First, there is considerable room for improvements in the pro-environment behaviors, levels of awareness, degrees of engagement, and expressions of commitment to sustainability among members of the University community.

⁴³ Rating of U-M's efforts to promote composting was asked for the first time in the 2014 SCIP surveys.

⁴⁴As in the case of other indices, respondents who did not rate more than two U-M initiatives were eliminated when creating the ratings index. If the remaining respondents did not rate one or two of the items comprising the index, they were assigned the modal value of those items for their entire group e.g. the modal value for either students, staff, or faculty. See Appendix D for a discussion of index construction.

Second, students' mode of travel to and from campus is more in line with the goal of greenhouse gas reduction than the journey to work of staff and faculty. Not surprisingly, students are most likely to walk, bike, or bus to campus. Similarly, students are likely to know more than University employees about transportation options available to them in Ann Arbor.

Third, faculty are more engaged in pro-environmental behaviors than students or staff. These activities include conserving energy, preventing waste, and purchasing sustainable foods. Faculty members also express a higher degree of commitment to sustainability than staff or students.

Fourth, students know less than staff or faculty about natural environment protection, preventing waste, and sustainable foods.

Fifth, staff tend to know more about U-M's sustainability initiatives than either students or faculty. Yet students are more engaged than either staff or faculty in sustainability activities on campus.

Finally, the table shows that with exception of sustainable foods (and natural environment protection for students), members of the University community in fall 2015 are no more likely to know about sustainability than they were in 2012. While some of the 2014 awareness indicator scores were significantly higher than the 2012 scores (waste prevention, natural resource protection) the 2015 scores are either unchanged from 2014 or lower. Nonetheless, all groups express high levels of commitment to sustainability. Yet, 2015 staff and faculty respondents are less willing than their 2012 counterparts to support government sustainability initiatives.⁴⁵

⁴⁵ All student, staff, and faculty indicator scores for 2012, 2013, 2014, and 2015 are summarized in Appendix E, Table E1.

Table 24

SUMMARY SUSTAINABILITY CULTURAL INDICATORS **for STUDENTS, STAFF, FACULTY**

(mean scores & significant changes)^a

2015	Students	Staff	Faculty
PRIMARY			
<i>Climate Action</i>			
Conservation Behavior	6.1	6.5	7.0
Travel Behavior	7.6	1.5	2.3 ▲
<i>Waste Prevention</i>			
Waste Prevention Behavior	6.9 ↑ ▲	7.1 ↑	7.6 ↑
<i>Healthy Environments</i>			
Sustainable Food Purchases	5.5	5.9 ↑	6.4
Protecting the Natural Environment	8.8	6.7	6.6 ↑
<i>Community Awareness</i>			
Sustainable Travel & Transportation	4.1 ↓	3.1	3.5
Waste Prevention	4.1	4.9	5.3
Natural Environment Protection	3.4 ↑	4.2	4.5
Sustainable Foods	4.7 ↑	5.2 ↑	6.0 ↑ ▲
U-M Sustainability Initiatives	5.1	5.3	5.1
SECONDARY			
Sustainability Engagement at U-M	1.9 ↑ ▲	1.1 ↑ ▲	1.2 ↑ ▲
Sustainability Engagement Generally	2.0	1.8	2.7 ↓ ▼
Sustainability Commitment	6.5 ↑	6.4	7.2
Sustainability Disposition	3.4	2.5 ↓	4.8 ↓
Rating U-M Sustainability Initiatives	6.7 ▲	6.7	6.5

^aSignificant changes are based on analyses of mean scores for the 4 years as shown in Appendix E, Table E1

↑ significant change from 2012 (p<.001)

↑ significant change from 2012 (p<.01)

↑ significant change from 2012 (p<.05)

▲ significant change from previous year (p<.001)

▲ significant change from previous year (p<.01)

▲ significant change from previous year (p<.05)

Data from the panels of undergraduate students who participated in the surveys over multiple consecutive years suggest that in some respects, a shift in the culture of sustainability is occurring on the U-M campus. These data are shown in Table 25 and report index scores for three separate student panels or cohorts. The first cohort of 108 undergraduate students were freshmen in 2012 and participated in all four years of SCIP. The second includes 190 freshmen who enrolled at U-M in 2013 and participated in years 2013-2015 and the third cohort includes 370 2014 freshmen who participated in SCIP in their first and

second years on campus. Data from these three undergraduate cohorts show how individuals within each of the cohorts change over time in terms of their behaviors, awareness and engagement. The data can also reveal similarities and differences across cohorts.⁴⁶

Across all three cohorts of undergraduates, the data indicate that students know more about sustainability and are more engaged in campus sustainability activities the longer they are at the University. In terms of the first cohort of undergraduates, who were freshmen in 2012, the table shows a significantly greater understanding of travel and transportation services around Ann Arbor, waste prevention practices, and sustainable foods over time, but surprisingly no change in their understanding of U-M's campus sustainability initiatives over the four years (2012 to 2015). These students report a significantly higher level of engagement in sustainability activities from 2012 to 2015 with steady increases each year, such as taking a sustainability course or joining an organization addressing sustainability or environmental issues. However, their behaviors with respect to the environment for the most part did not change. One exception to these trends is a significant increase in waste prevention activities among this cohort from the time they were freshmen to when they were seniors. The greatest increase in this behavior occurred between their junior (2014) and senior years (2015). This cohort was also significantly less disposed in 2015 than they were in 2012 to personally paying fees for expanding sustainability initiatives on campus and were significantly more critical of U-M sustainability initiatives in 2015 than they were as freshmen in 2012.

The second cohort, who were freshmen in 2013 are similar to the previous cohort, showing a significantly greater understanding over time of travel and transportation services around Ann Arbor, waste prevention practices, and sustainable foods. As with the first cohort, this group of undergraduate students reported no change in their understanding of U-M's campus sustainability initiatives from 2013 to 2015. Surprisingly though and distinct from the previous cohort, this group reported a significant decrease in their awareness about protecting the natural environment over time. These students, again similar to the first cohort, reported a significantly higher level of engagement in sustainability activities from 2013 to 2015 with steady increases each year. This group also reported being more engaged and a greater commitment to sustainability from 2013 to 2015. As with the previous cohort, these changes in awareness did not translate into increases in pro-environmental behaviors for the majority of the indicators. However, as with the previous cohort, these students were significantly more involved in waste prevention from their freshman year to their junior year. The greatest jump in this behavior occurred during the same year as reported by the previous cohort, from 2014 to 2015, albeit when this group was transitioning from their sophomore to junior year. Different from the 2012 cohort, this cohort also showed a significant increase in sustainable travel with the significant change occurring between their freshman (2013) and sophomore (2014) years at U-M. Lastly, this cohort was significantly less disposed in 2015 than they were in 2013 to personally paying fees for expanding sustainability initiatives on campus, but were consistent over time in their ratings of U-M's sustainability initiatives.

⁴⁶ It is important to note in Table 25 that sample size has an impact on the group mean difference necessary to be determined statistically significant. Specifically, the larger the sample size, as is the case for the 2014 cohort, smaller mean differences across years can be determined to be statistically significant when the same mean difference observed in a smaller sample will not be statistically significant. Therefore when making comparisons across cohorts it is important to look at both descriptive trends as well as the statistical significance (i.e., p-value) of the change. Also, it is important to note that the data presented in Table 25 are for those students who participated in all possible years for their cohort (e.g., all four years for the first cohort). Students were removed from analyses conducted for Table 25 if they did not participate in any of their possible time points. Given that these groups of students may be different in some ways compared to the students who participated in only some of the available time points we also present data in Appendix Table E5 for the first two panels including all students who participated in at least the first and last possible time point. For the first cohort this includes having at least participated in 2012 and 2015, and for the second cohort 2013 and 2015. In large part a comparison of results from Table 25 and Appendix Table E5 shows similar findings. A few differences were observed in terms of the significance level of changes across years, but the trends are in the same direction across the panel samples.

The third cohort who entered the University in 2014 and participated in the survey at two time points (2014 and 2015) showed a significantly greater understanding of travel and transportation services around Ann Arbor and sustainable foods over the year. However, there was no increase in their awareness of waste prevention as was present in the previous two cohorts. Surprisingly though, this cohort still showed a significant increase in waste prevention activities over the two years, albeit a small change. Similar to the 2013 cohort, this 2014 cohort of freshmen reported a significant decrease in their understanding of natural environment protection. Lastly, this third cohort report a significantly greater commitment to sustainability, but no change in their disposition to personally paying to expand sustainability initiatives.

Overall, the analysis of data from these multiple panels/cohorts of undergraduate students indicate that, first, students become more engaged in campus sustainability-related activities (e.g., attend Earthfest, get involved in a campus organization or take a course that addresses sustainability or environmental issues) the longer they are on campus. This was observed for all three cohorts. Second, in terms of waste prevention, the three cohorts significantly increased their involvement in this activity between 2014 and 2015. This may result from the University's efforts during that time period to intensify its promotion of waste reduction. Finally, the panel data reveal a substantial and significant increase in sustainable travel among the more recent cohorts (2013 and 2014) This could reflect an increase during this period in the number of high-rise, high-density student housing units within a walkable distance to central campus.

Table 25

STUDENT PANEL SUSTAINABILITY INDICES - 2012-2015

(mean scores)

INDICES	Undergraduate Panel							
	Fr-Soph-Jr-Senior				Fr-Soph-Jr			
	2012	2013	2014	2015	2013	2014	2015	Fr-Soph 2014 2015
PRIMARY								
<i>Climate Action</i>								
Conservation Behavior	6.1	6.2	6.0	5.9	6.2	6.0	6.1	6.1
Travel Behavior	8.1	8.5	8.7	8.4	7.6	8.5	8.4	8.4
<i>Waste Prevention</i>								
Waste Prevention Behavior	6.4	6.6	6.4	7.2	6.1	5.8	6.8	7.0
<i>Health Environments</i>								
Sustainable Food Purchases ^a	5.1	4.8	5.2	5.1	6.0	5.3	5.1	5.4
Protecting the Natural Environment ^a	10.0	9.5	9.6	9.7	6.7	9.4	9.5	9.3
<i>Community Awareness</i>								
Sustainable Travel and Transportation	4.0	4.3	4.6	4.9	3.5	4.1	4.6	3.9
Waste Prevention	4.0	4.5	4.6	4.5	3.9	4.0	4.3	4.1
Natural Environment Protection	3.1	3.3	2.9	2.8	3.4	2.8	2.9	3.2
Sustainable Foods	4.1	4.5	4.9	5.0	4.0	4.5	4.6	4.7
U-M Sustainability Initiatives	5.8	5.9	5.9	6.0	5.8	6.0	6.0	5.8
SECONDARY								
Sustainability Engagement at U-M	1.6	2.5	2.9	4.4	1.0	2.1	3.1	2.7
Sustainability Engagement Generally	2.4	1.9	2.3	2.3	1.3	1.4	1.7	2.2
Sustainability Commitment	6.5	6.2	6.6	6.9	5.9	6.2	6.2	6.5
Sustainability Disposition	3.7	3.0	3.2	3.0	3.3	3.0	2.8	3.3
Rating U-M Sustainability Initiatives	7.0	7.0	6.6	6.5	6.9	7.0	6.8	6.7
number of respondents ^a	108				190			
					370			

^aMost U-M freshmen live in residence halls and therefore were not asked questions about purchasing sustainable foods and protecting the natural environment. Consequently, only 12 of the 2012 freshmen selected to participate in the panel answered questions about sustainable food purchases and just 3 answered questions about natural environment protection. Similarly, only 15 and 5 freshmen in 2013 answered these questions respectively, and only 11 and 5 in 2014. Therefore statistical analyses to examine the significance of change were not examined for these

↑ significant change from freshman year ($p < .001$)

↑ significant change from freshman year ($p < .01$)

↑ significant change from freshman year ($p < .05$)

▲ significant change from previous year ($p < .001$)

▲ significant change from previous year ($p < .01$)

▲ significant change from previous year ($p < .05$)

Table 25

The sustainability indicators can be summarized in other ways based on the interests of administrative and operations personnel representing different units within the University.⁴⁷ One way is to determine if and how indicators differ for university employees (staff and faculty) working in buildings in different parts of the U-M Ann Arbor campus. That is, index scores can be calculated for staff and faculty whose primary work place is on different campuses and in different regions making up the U-M.⁴⁸ Table 26 summarizes indicators for respondents (staff and faculty together) by the campus or region containing the building where they have their primary office or place of employment. It should be noted that the numbers of respondents from buildings in South Campus and from East Campus buildings are relatively small and therefore the index scores are estimates with large errors (see Appendix F, Figures F5 and F6).

For the most part, there are small variations in the 2015 scores across the different parts of the University. However, many of the index scores for Medical Campus employees tend to be lower than scores for other parts of U-M. At the same time, indicators scores for these employees are significantly higher than those of the 2012 Medical Campus employees. It is not surprising to see that the travel behavior index scores are higher (better) for employees working the two Central Campus regions than those working elsewhere. As in previous years, faculty and staff working in South Campus along with those on central campus are most engaged in campus sustainability activities than employees working elsewhere at the U-M. The most dramatic change in level of engagement occurred among the Medical Campus employees. During the previous 3 years, their scores averaged a little under 0.03; the 2015 score increased to 0.8. Nonetheless, the engagement in sustainability among University staff and faculty throughout the University remains low.

Table 26 shows where there are other significant changes in the index scores from 2012. For instance, there was greater understanding of sustainable foods in 2015 among staff and faculty employed in buildings in Medical Center, Central Campus West and Health Science regions compared to 2012. Similarly, respondents in the Medical Center were more likely to purchase sustainable foods in 2015 than in 2012.⁴⁹

Survey data covering different campuses, regions, and sub-regions can be examined in relation to contextual or environmental 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.⁵⁰ These metrics include building energy use, CO2 emissions, waste going to landfills and recycled material. As part of SCIP, the first two metrics (BTU/square feet and metric tons of CO2) have been compiled for buildings within each campus area and are summarized in Table 27 for 2012, 2013, 2014 and 2015.⁵¹ The data covering changes between 2012 and 2015 reveal that energy use and CO2 emissions have increased in most parts of campus while decreasing in other parts, most notably the northern sub-region of Health Sciences.⁵² The table also

⁴⁷ Academic researchers may also be interested in examining indicator data for subgroups of respondents such as gender, length of time at the University, employment status, or other attributes covered in the questionnaires.

⁴⁸ Regions are defined by the U-M Plant Operations Team for administrative/operational purposes. Several buildings within the Health Sciences region are often included in as part of the Medical Campus. With few exceptions, the number of respondents from individual buildings on the Ann Arbor campus is too small to make reasonably precise statistical estimates for indicators in each building. Accordingly, buildings have been geographically grouped into campuses, regions, and sub-regions for analysis purposes.

⁴⁹ Differences between sub-regions for the 2015 indicators have also been examined and are shown in Appendix Table E2. In a few instances, the indicator scores of the two sub-regions are significantly different. Appendix E Table E3 shows the 2012 and 2015 index scores for the 15 indicators.

⁵⁰ See <http://sustainability.umich.edu/report/2013/> and <http://www.ocs.umich.edu/reporting.html>

⁵¹ Since buildings vary in size, the data are presented on a square foot basis.

⁵² It is recognized that there are many factors that can impact building energy use including climatic conditions, the number of heating/cooling days, energy management retrofits, and types of HVAC equipment in the building. The reader is also reminded that the conservation behavior index consists of actions to conserve energy anywhere.

shows for each campus and sub-region, changes in conservation behavior among faculty/staff respondents working in the associated buildings. The data clearly show that changes in energy use and CO2 emissions are not associated with the conservation practices of staff and faculty in their buildings.⁵³

Table 26

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

(mean scores & change from 2012)

2015	Central Campus West	Central Campus East	North Campus	Medical Campus	Health Sciences	South Campus	East Campus
PRIMARY							
<i>Climate Action</i>							
Conservation Behavior	7.3	7.0	6.9	5.9	6.7	7.0	6.4
Number of respondents	371	263	287	372	319	65	80
Travel Behavior	3.1	3.5	1.6	1.1	2.2	0.6	0.2
Number of respondents	373	269	294	397	323	66	82
<i>Waste Prevention</i>							
Waste Prevention Behavior	7.5	7.5	7.7 ↑	6.7	7.3	7.5	7.6
Number of respondents	374	269	294	397	322	66	82
<i>Healthy Environments</i>							
Sustainable Food Purchases	6.3	6.4 ↓	6.0	6.0 ↑	5.8	5.9	5.7
Number of respondents	369	260	286	385	316	63	82
Protecting the Natural Environment	7.7 ↑	7.5	6.6	6.6 ↑	7.0	6.2	5.7
Number of respondents	296	215	236	344	274	58	71
<i>Community Awareness</i>							
Sustainable Travel & Transportation	3.7	3.7	3.4	3.0 ↑	3.8	3.2	3.0
Number of respondents	373	267	293	396	323	66	82
Waste Prevention	5.5	5.3	5.4	4.3	5.2	5.7	5.5
Number of respondents	374	269	294	396	323	66	82
Natural Environment Protection	4.2	4.1	4.2	4.2	4.6	4.3	4.9
Number of respondents	374	269	293	396	323	66	82
Sustainable Foods	6.0 ↑	5.7	5.3	5.2 ↑	5.4 ↑	5.0	5.1
Number of respondents	374	269	294	397	323	66	82
U-M Sustainability Initiatives	5.3	5.2	5.2	5.0	5.4	5.9	5.2
Number of respondents	372	267	291	397	319	64	82
SECONDARY							
Sustainability Engagement at U-M	1.7	1.8	0.8	0.8 ↑	1.5	1.9	0.7
Number of respondents	361	263	288	390	313	64	79
Sustainability Engagement Generally	2.8	2.3	2.2	1.8	2.0	1.6	1.9
Number of respondents	374	268	291	397	321	66	81
Sustainability Commitment	7.1	7.0	6.5	6.2	6.9	6.6	6.0
Number of respondents	374	268	294	395	322	65	82
Sustainability Disposition	3.7	3.4	3.2	2.4	3.4	2.7	2.7
Number of respondents	364	261	290	392	316	64	79
Rating U-M Sustainability Initiatives	6.7	6.7	6.7	6.7	6.6	7.2	6.7
Number of respondents	251	183	227	290	252	53	64

Significant changes are based on analyses the of the 2012 and 2015 mean scores shown in Appendix E, Table E2

↑ significant change (p<.001)

↑ significant change (p<.01)

↑ significant change (p<.05)

⁵³ The relationship between energy use and behavior may be different for any single building. We plan to examine these relationships in selected buildings having large numbers of respondents in each year of SCIP. We also will continue to investigate the aggregated data using alternative approaches (i.e. multi-level modeling) and as additional survey and environmental data become available.

Table 27

***CHANGE IN ENERGY USE, CO2 EMISSIONS, & CONSERVATION BEHAVIOR
AMONG FACULTY/STAFF, by CAMPUS & SUB-REGION: 2012-2015***

Campus, Region, Sub-Region ^a	BTU Per Square Feet ^b					MTCO2 Per Square Feet ^b					Change in Conservation Behavior 2012-2015
	2012	2013	2014	2015	Change 2012-2015	2012	2013	2014	2015	Change 2012-2015	
Central Campus Northeast (18)	135,227	129,891	148,072	139,545	3%	0.0131	0.0127	0.0139	0.0133	1%	4.7%
Central Campus-Southeast (7)	258,408	272,592	256,900	245,132	-5%	0.0250	0.0259	0.0248	0.0238	-5%	-6.4%
Central Campus-Northwest (20)	166,397	165,956	162,655	152,067	-9%	0.0159	0.0158	0.0156	0.0151	-5%	1.0%
Central Campus-Southwest (22)	119,499	119,418	120,402	102,123	-15%	0.0121	0.0120	0.0122	0.0102	-15%	4.8%
Medical Campus (12)	208,582	192,313	206,551	200,786	-4%	0.0290	0.0270	0.0285	0.0282	-3%	1.3%
Health Sciences-North (17)	327,107	327,523	301,739	312,928	-4%	0.0302	0.0302	0.0286	0.0287	-5%	-2.6%
Health Sciences-South (20)	291,139	289,438	295,764	279,600	-4%	0.0292	0.0290	0.0291	0.0278	-5%	4.9%
North Campus-North (39)	226,713	254,290	266,928	303,789	34%	0.0265	0.0285	0.0277	0.0296	11%	-2.0%
North Campus-South (10)	188,775	198,204	209,583	200,700	6%	0.0223	0.0231	0.0238	0.0239	7%	-5.2%
South Campus (30)	135,721	146,134	159,949	125,737	-7%	0.0146	0.0152	0.0162	0.0130	-11%	-8.5%
East Campus (5)	136,347	146,638	160,495	224,479	65%	0.0333	0.0297	0.0231	0.0314	-6%	-5.1%

^a Numbers in parentheses represent the number of buildings within each campus, region, and sub-region in 2012 for which BTU, CO2, and square footage data are available. In any one year, one or two buildings may have been removed and/or new ones built and occupied within a campus, region, or sub-region. These are accounted for in the calculations of BTU and CO2 per square feet in the annual calculations.

^b Data cover each fiscal year. For example, the 2012 data cover FY2012 running from July 2011 to Jun 2012.

A similar approach was used in comparing annual data on recycled and waste material on the one hand and waste prevention behavior on the other.⁵⁴ Table 28 shows changes for each campus, region, and sub-region in the amount of recycled waste and trash, and change in waste preservation behavior among building occupants. Based on the 4 years of data, there appears to be no direct association between change in waste prevention behavior and the hard data obtained by the University. Again, on-going efforts will be made to explore these relationships as additional behavioral data and estimates of waste become available.

Table 28

***CHANGE IN RECYCLING, TRASH*, AND WASTE PREVENTION BEHAVIOR AMONG
FACULTY/STAFF, by CAMPUS & SUB-REGION: 2012-2015***

Campus, Region, Sub-Region	Recycling Pounds per Square feet					Waste Pounds per Square Feet					Change Waste Preservation Behavior 2012-2015
	2012	2013	2014	2015	Change 2012-2015	2012	2013	2014	2015	Change 2012-2015	
Central Campus Northeast (18)	0.164	0.174	0.177	0.227	38%	0.626	0.604	0.627	0.461	-26%	4.5%
Central Campus-Southeast (7)	0.126	0.138	0.157	0.200	59%	0.369	0.353	0.392	0.514	40%	0.0%
Central Campus-Northwest (20)	0.130	0.130	0.132	0.111	-15%	0.4454	0.3730	0.3781	0.2601	-42%	1.7%
Central Campus-Southwest (22)	0.227	0.219	0.227	0.198	-13%	0.6484	0.5819	0.6071	0.5005	-23%	5.9%
Medical Campus (12)	na	na	na	na	na	na	na	na	na	na	3.3%
Health Sciences-North (17)	0.172	0.167	0.172	0.186	8%	0.8580	0.7668	0.3613	0.3387	-61%	-1.2%
Health Sciences-South (20)	0.160	0.168	0.161	0.173	8%	0.6772	0.6292	0.6384	0.5636	-17%	1.9%
North Campus-North (39)	0.126	0.130	0.135	0.131	3%	0.2579	0.2638	0.2729	0.2939	14%	5.4%
North Campus-South (10)	0.149	0.156	0.170	0.172	16%	0.4552	0.4007	0.4068	0.3874	-15%	9.2%
South Campus (30)	0.178	0.183	0.225	0.251	41%	0.5646	0.4466	0.5301	0.4275	-24%	0.0%
East Campus (5)	0.167	0.148	0.165	0.194	16%	0.4686	0.1315	0.1418	0.1477	-68%	5.0%

*The term, Trash is sometimes referred to as Waste. In The context of The University of Michigan, it refers to non-recyclables that are diverted to disposal facilities (i.e. land fills, etc.)

^a Numbers in parentheses represent the number of buildings within each campus, region, and sub-region in 2012 for which BTU, CO2, and square footage data are available. In any one year, one or two buildings may have been removed and/or new ones built and occupied within a campus, region, or sub-region. These are accounted for in the calculations of BTU and CO2 per square feet in the annual calculations.

^b Data cover each fiscal year. For example, the 2012 data cover FY2012 running from July 2011 to Jun 2012.

⁵⁴ Recycling and trash data are collected by the University's Plant Building and Grounds Services and its sustainability program coordinator and cover annual estimates from bins associated with each building on campus. In a few instances when two U-M buildings share a bin and those buildings are located in two adjacent sub-regions, the recycling and trash weights were assigned to each building in proportion to building size.

An indication that there is a relationship between the behaviors of building occupants and University estimates of waste is seen when examining data for selected individual buildings rather than an aggregation of buildings into campus, region, and sub-region groupings. This is shown in Table 29 with data covering waste and change in waste prevention behavior for the major residence halls and for Northwood apartments. Preliminary analysis indicates that a relationship exists among these specific residential structures between the amount of trash sent to disposal facilities, and the waste prevention behavior of student occupants ($p < .05$).⁵⁵ As in the case of energy use and conservation behavior of building occupants, further analyses of the data are anticipated.⁵⁶

Table 29

CHANGE IN RECYCLING, WASTE & WASTE PREVENTION BEHAVIOR AMONG STUDENTS IN U-M HOUSING by PLACE OF RESIDENCE : 2012-2015

U-M Housing ^a	Recycling Tonnage per Square Feet					Waste Tonnage Per Square Feet					Change in Waste Prevention Behavior 2012-2015
	2012	2013	2014	2015	Change(%) 2012-2015	2012	2013	2014	2015	Change(%) 2012-2015	
Alice Lloyd***	0.04	0.24	0.25	0.23	-8%	0.03	0.42	0.63	0.42	0%	7.6%
East Quad*	0.29	0.03	0.54	0.50	71%	0.83	0.01	0.66	0.56	-33%	**
Mosher-Jordan	0.71	0.83	0.86	0.69	-3%	1.40	1.32	1.30	1.14	-18%	8.5%
North Quad	0.24	0.27	0.27	0.26	7%	0.51	0.46	0.49	0.50	-3%	7.6%
Northwood Apartments	0.23	0.25	0.26	0.27	16%	0.53	0.50	0.52	0.46	-13%	4.6%
Couzens	0.18	0.21	0.19	0.18	3%	0.29	0.28	0.24	0.24	-17%	9.5%
Bursley-Baits	0.37	0.35	0.38	0.41	12%	0.71	0.66	0.52	0.46	-35%	7.8%
Mary Markley	0.53	0.53	0.53	0.43	-19%	1.09	1.12	1.04	0.85	-22%	8.0%
Stockwell	0.20	0.20	0.20	0.15	-25%	0.94	0.82	0.56	0.49	-49%	12.3%
South Quad*	0.45	0.44	0.02	0.50	11%	0.68	0.57	0.02	0.95	39%	7.3%
West Quad*	0.43	0.40	0.35	0.01	-99%	1.14	1.07	0.86	0.00	-100%	6.8%

^a Data are excluded for the smaller residence halls having small number of respondents. These include: Bestsy Barbour, Martha Cook, Fletcher, Henderson, Newberry, and Oxford.

*In 2005, U-M launched a long-term program of selective upgrades and complete renovations to its housing stock. In 2012, East Quad was closed for renovations followed by the closure of South Quad in 2013 and the West Quad closure in 2014. Figures for recycling and waste during renovation do not reflect the normal occupancy use.

**During renovations, residence halls were unoccupied. Therefore, East Quad students could not be selected in the 2012 SCIP sample while the 2014 SCIP sample had no West Quad participants. Consequently, survey data covering both 2012 and 2014 were not available to measure change scores for students in these residence halls.

*** 2012 data covering energy use and CO2 emissions for Alice Lloyd are low since the building was being renovated and therefore unoccupied during the previous year. Change for this residence hall is based on the difference between 2015 and 2013

The examination of behavioral change and its relationship to changes in the amount of waste, recycled material, and building energy use represents one way of determining the effects of the University's efforts to bring about a shift in sustainability culture on campus. As shown above, this involves matching secondary data associated with each building with the reported behaviors of building occupants where those behaviors may or may not occur within their respective buildings. Still another approach to determining the effects of the University's efforts to change the culture on campus is through additional analysis of the information derived from the questionnaires. The SCIP team is beginning these efforts working in coordination with the University's operational personnel.

In an attempt to see if participation in the Planet Blue Ambassadors Program and the relatively new Sustainability Workplace Certification Program has had any impact on individual behaviors and levels of awareness and engagements, the 2015 data covering faculty and staff were examined.

⁵⁵ The nonparametric correlation (Spearman's rho) is -.71 and is based on 9 observations-8 residence halls and the Northwood apartments.

⁵⁶ University residence hall and Northwood apartments data on energy use, CO2 emissions and change in student conservation behavior for the three years are shown in Appendix Table E4.

Staff and faculty who reported being part of either the Planet Blue Ambassadors Program or the Sustainable Workplace Certification Program had significantly higher index scores for many of the cultural indicators than those who had never participated in the programs. For instance, staff who were Planet Blue Ambassadors were more likely to conserve energy, reduce their waste, and purchase sustainable foods than those who were not in the program. Similarly they were also more likely to understand all aspects of sustainability, know more about U-M's Sustainability efforts, rate those efforts higher, and be more committed to sustainability than those who were not Planet Blue Ambassadors. Faculty who were Ambassadors were also more knowledgeable, more engaged on and off campus and more committed than non-Planet Blue Ambassadors.

The Sustainability Workplace Certificate Program has had a similar impact on both staff and faculty understanding of sustainability generally and what U-M was doing to promote it. Not surprisingly, Program participants from both groups were more engaged and more committed than those who were not certified. And for faculty who participated in the Certificate Program, they were more likely to purchase sustainable foods and prevent waste than faculty member who were not certified.

These two programs represent two of U-M's most significant efforts to build a culture of sustainability within the campus community. The SCIP results indicate that these programs have been successful to date and that its participants are clearly sustainability champions.

E. NEXT STEPS

SCIP is a multi-year project designed to measure and track over time the *culture of sustainability* on the Ann Arbor campus of the University of Michigan. This report covers findings from the fourth year including cultural indicator scores and their changes, if any that occurred since the initial survey in 2012. These changes do not represent trends nor do they portray an overall shift in sustainability culture on campus. They simply represent individual components of an overall culture that have shifted during the first four years of the program.

Moving forward, SCIP will shift to an every other year survey administration plan. That is, a fifth year of data collection will occur in fall 2017 followed by others in 2019, 2021, and so forth. With continued funding provided by the U-M Provost's Office this schedule will still allow for continued analysis of results including the student panels. In part, moving to an every other year survey is due to limited funding. But it also reflects a growing understanding that cultural change is a complex phenomenon with many dimensions, some of which are slow to change. Over the coming year, the SCIP team will be reviewing findings and discuss them with U-M's operational personnel and administrators. Based on these discussions, it will examine possible modifications to future questionnaires and explore uses of the existing data for other purposes.

On-Going Analysis of Data

As mentioned earlier, findings presented in this report are primarily descriptive showing differential responses among the U-M's students, staff, and faculty. It is expected that the data from 2015 and from earlier years will be further examined in order to address questions posed by operations personnel, test new hypotheses, and consider factors that may be associated with individual question responses, indicator scores, or changes in either. In fact this is currently being conducted through a required social sciences course (NRE 510) for all first year students in the School of Natural Resources and Environment. In

addition, several graduate students have used and are using SCIP data for their dissertation and other research projects.

Plans are also being made to use the panel data for identifying antecedent conditions that affect individual changes in behavior and levels of awareness. For instance, early panel data have been used to examine student engagement in University sustainability activities and factors influencing change (if any) in engagement from one year to the next. Preliminary findings show that time, students who lived for at least one year in a residence hall as well as those who lived with more people were more likely to be engaged in sustainability activities than those who lived off-campus over a two year period. . Finally, the analyses show that higher levels of student engagement directly increase awareness of waste prevention behavior which in turn, alter waste prevention and conservation behaviors.⁵⁷ There are numerous other opportunities for examining changes in other types of student behavior and identify their causes using the SCIP panel data.

It is also possible to analyze cross-sectional data covering faculty and staff to explore other questions of interest to researchers and operations personnel. For example, we can determine whether faculty/ staff characteristics such as gender, housing tenure and length of residence may be associated with say, their behaviors vis-à-vis protecting the natural environment or conservation practices at home in contrast to their conservation practices within the University. Furthermore, the data can also be examined to see if there are differential indicator scores for students and faculty associated with different academic units on campus.⁵⁸ While the pursuit of many of these analyses will be determined by the research team, others will emanate from questions posed by potential users of the findings. These users include U-M administrators and staff associated with the Office of Campus Sustainability, University Housing, Parking and Transportation, the University Hospital, Food Services and others. Similarly, faculty members who teach and/or conduct research covering one or more facets of sustainability may want to mine the data. Finally, the data offer a rich resource for graduate students throughout the University who are looking for thesis or dissertation topics. In anticipation of requests for the many uses of the data, mechanisms are available for individuals to make inquiries about the data and access them.⁵⁹

Finally, plans are being made to further analyze the SCIP data in conjunction with contextual or environmental data derived from other sources. As reported above, we have taken an initial look at data collected by the Office of Campus Sustainability and Plant Operations covering individual buildings clustered into campuses and sub-regions.⁶⁰ The data correspond to our surveys over the past for years. . We have also examined changes in selected environmental indicators and considered them in relation to changes in our behavioral indicators. These data cover energy use, carbon emissions, recycled material and trash. In the months ahead, we expect to examine other types of environmental information vis-à-vis the survey data.⁶¹ In future years when more SCIP data become available, it is expected that we will be able to model how changes in environmental conditions impact changes in behaviors and vice versa. For example, it should be possible to develop models showing how an X change in conservation behavior on campus results in a Y savings in annual energy costs. Similarly, modeling the effects of increased campus waste prevention behavior on tonnage of recycled material is possible.

⁵⁷ For a detailed discussion of these analyses, see Webster, Marans, and Callewaert (Work in Progress).

⁵⁸ Preliminary analysis of panel data covering engagement indicates that students in the social sciences were most likely to be engaged in sustainability activities on campus whereas those in humanities were least likely to participate in sustainability activities.

⁵⁹ Procedures to follow in requesting SCIP datasets are described on program website at

<http://graham.umich.edu/leadership/scip/materials>.

⁶⁰ See <http://sustainability.umich.edu/report/2013/> and <http://www.ocs.umich.edu/reporting.html>.

⁶¹ Further discussions are planned with staff from the Office of Campus Sustainability the Graham Sustainability Institute and others in order to a) identify other types of environmental phenomena that might be associated with levels of awareness and behaviors and b) the availability of data covering these phenomena for buildings and regions on campus.

This will enable us to produce index scores for each of Ann Arbor's campuses, regions, and sub-regions of the most populated regions.⁶² These different geographic areas present opportunities to conduct experiments or trial programs in some places and not in others in order to determine the impact of a new initiative.

Evaluating New Sustainability Initiatives

Because of the longitudinal nature of SCIP, it has become increasingly evident that SCIP data could be used to evaluate new sustainability initiatives throughout the University. That is, data collected before and after an intervention could reveal if and by how much change has occurred in selected behaviors or levels of awareness of the University's sustainability efforts such as those dealing with energy conservation, waste reduction, or environmental protection. The relatively large numbers of students, faculty and staff respondents each year and their distribution in different campus's, regions, sub-regions and buildings also lends itself to conducting experiments or trials. In other words, these experiments or trials could be initiated in one or two places such as a sub-region or building over a period of time (i.e. a semester, an academic year) but not in other sub-regions or buildings. Thus, two conditions exist for conducting experiments—having data before and after an intervention and having data from a control group of people against which data from an experimental group of people can be compared.

There is justification for considering experimental or trial sustainability initiatives and using SCIP as a vehicle in their assessment. For more than a decade, U-M has initiated numerous sustainability programs **designed** to conserve energy, reduce waste, and change behaviors of students, **faculty**, and staff. In some cases, the programs have proved successful and continue to flourish. In other instances, they have been discontinued. The "Use Your Power Wisely" signage campaign is an example of the latter. Had some unsuccessful efforts been tested in a few buildings rather than implemented throughout the entire University, there could have been a considerable savings in money and staff resources.

In 2015, several new initiatives were recommended as part of a series of sustainability reports to President Schlissel. While some of the recommended initiatives are relatively inexpensive and easy to implement, others will require substantial planning, start-up time, and financial resources to implement them. In cases where initiatives would be relative easy and inexpensive to implement, annual SCIP data could be used to demonstrate to decision makers whether the initiative accomplished what it was intended to do. If it had not done so, the initiative could be discontinued with relatively little cost to the University. However, in the case where recommended new initiatives require substantial resources in terms of time and money, it would seem prudent to set up experiments or trials in one part of campus, evaluate their impacts, and based on the evaluation, determine whether it should be extended to other parts of the campus, modified, or discontinued. SCIP data could be instrumental in making that assessment. One current experiment, begun in early 2016 deals with composting.

According to the report to the President covering waste reduction, "composting, the managed decomposition of organic material into a nutrient-rich soil amendment, is an integral component to reaching the University of Michigan's waste reduction goal".⁶³ Currently, only a small amount of the University's compostable waste is diverted from landfills. Much of that waste is food scraps coming from dining facilities in residence halls. In efforts to expand composting beyond the dining halls into other

⁶² See Appendix Figures F1 to F6.

⁶³ The University of Michigan report covering waste reduction can be found at:
<http://sustainability.umich.edu/media/files/Landfill-Waste-Reduction-Committee-Report-2015.pdf>

parts of the students' living-learning environment, it was decided to launch a trial or pilot program for one semester in Bursley, one of the University's largest residence halls.

The pilot program was planned and implemented by a team of Planet Blue Student Leaders under the guidance of key staff from DSA and the Graham Sustainability Institute. SCIP data re: composting collected fall 2015 represent the baseline against which subsequent data would be compared. Because of the limited number of Bursley residents who participated in the experiment, it was decided to continue the experiment through the 2016-2017 academic year. The evaluation will involve identifying the Winter 2016 and Fall-Winter 2016-2017 Bursley residents in the Fall 2017 SCIP survey and querying them about their composting experiences and knowledge. The findings would then be compared with findings from student participants who lived in other U-M residence halls. If the former Bursley residents were substantially more informed and more engaged in composting than former residents of other residence halls, the composting program could be extended to other residence halls in 2018.⁶⁴

In the coming months, the SCIP team will be working with the Office of Campus Sustainability and other operational units to identify other possible experiments or trials that could be evaluated in part using SCIP data.

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 shifting toward a culture of sustainability. The University of Michigan 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, material presented in this fourth year report is available on the web.⁶⁵ Second, we continue to discuss our work at professional and academic meetings and will continue to do so in the months ahead. During the past few years, we presented an overview of SCIP and findings at venues in India, Ireland, Taiwan, Brazil, Great Britain, and Sweden in addition to groups throughout the U.S. Other presentations are planned for 2017 including papers featured at an upcoming symposium on sustainability and social science research at U-M in May 2017.⁶⁶ In addition, two short animated videos prepared in 2015 will continue to be used to succinctly describe SCIP. One is aimed at external audiences such as other universities, corporations, and cities while the second will be used within U-M. Finally, the Graham Sustainability 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.

⁶⁴ Other factors such as the University's composting costs and the amount of composted material would also be assessed in a decision regarding the future of an expanded composting program.

⁶⁵ See: <http://www.graham.umich.edu/leadership/scip>. The website also includes copies of the 2015 questionnaires.

⁶⁶ Details for the symposium can be found at: <https://www.haw-hamburg.de/en/ftz-als/events/michigan2017/>

APPENDICES

Appendix A: Methodology

The 2015 sample selection followed the same procedures used in prior years (2012, 2013, and 2014). The student sample was drawn by the U-M Office of the Registrar. To be eligible students had to meet two criteria: 1) be a full-time undergraduate, graduate or professional student, and 2) registered for the fall semester on the Ann Arbor campus.

The staff and faculty sample was drawn by the U-M Human Resources Records and Information Services. To be eligible employees had to meet two criteria: 1) benefits eligible, and 2) employed on September 1, 2015 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). 16,307 students, 3,000 faculty, and 1,979 staff were invited to participate in the survey during the 2015 fall semester.

Sample was divided into replicates within six rolling releases. The first release occurred October 26 and the final release November 3, 2015. Each case was first sent a prenotification e-mail from President Schlissel. The following day an invitation e-mail with a link to the survey was sent from ISR. Four days later non-respondents were sent a reminder e-mail. Six days later a second reminder was sent to non-respondents. Six days later a third reminder was sent to non-respondents. There were two versions of the third reminder email. One contained the reminder language with a link to the survey. The second e-mail contained the reminder language and two links. The first link was to a video reminder from U-M head women's basketball coach Kim Barnes Arico, with the second link going to the survey. November 30, non-respondents from all six replicates were sent their final reminder. The 2015 survey was optimized for mobile devices. This included a reformatting of grid questions for smaller screens.

Completed Questionnaires: 4,214 students accessed the survey with 3,416 (81.1%) answering enough questions (more than 80 percent of the questions) to be considered a completed interview). Among the staff and faculty, 2,275 accessed the survey, with 2,014 (88.5%) answering enough questions be considered a completed interview.

Response Rates: Student response rates for cohorts reported in Table 2 are based on figures provided by the Office of the Registrar. As noted, some students identified themselves with a higher or lower class than their official designation.

Encouragement and Token of Appreciation: A key part of the design was the encouragement and follow-up of non-respondents and offering a token of appreciation. All e-mails were personalized. The initial prenotification e-mail from President Schlissel emphasized the importance of the survey and the recipient's participation. Follow-up e-mails were sent at regular intervals to non-respondents as reminders and encouraged participation. As part of the third reminder a portion of non-respondents received a video of U-M head women's basketball coach Kim Barnes Arico urging participation in the survey. Finally, a token of appreciation for time spent taking the survey was offered to those who submitted a survey. Each participant had an approximately 1 in 100 chance of winning. Submitted cases from the cross-section were offered a \$50 token of appreciation and submitted cases from the student panel were offered a \$100 token of appreciation.

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 undergraduate 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. The true values were used in creating the weights used in analyzing the 2015 data.

Appendix B: Demographic Characteristics of the Respondents

In addition to asking about their status at 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. The distributions of responses to the student and staff-faculty demographic questions are shown below. Demographic characteristics of the 2015 respondents are similar to characteristics of those who responded in 2012, 2013 and 2014.

Appendix Table B1

STUDENT DEMOGRAPHIC CHARACTERISTICS

(percentage distribution)*

2015	All	Undergraduate Students					Graduate Students
	Students	Fresh	Soph	Junior	Senior	All	
<hr/> <i>Gender</i> <hr/>							
Female	47	47	56	52	44	49	44
Male	51	52	42	46	56	50	54
Other	1	*	*	1	0	*	1
Chose not to respond, transgender	1	1	2	1	0	1	1
Total	100	100	100	100	100	100	100
Number of respondents	2443	1069	321	335	294	2019	424
<hr/> <i>Age of student</i> <hr/>							
18-19	29	99	83	6	0	45	0
20-21	28	1	15	83	67	42	2
22-23	14	*	1	7	25	9	22
24 and older	29	0	1	4	8	4	76
Total	100	100	100	100	100	100	100
Mean Age (based on year of birth)	22.7	18.5	18.9	20.9	21.7	20.1	27.4
Number of respondents	2339	1022	307	319	283	1931	408

** 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.

Appendix Table B2

STAFF/FACULTY
DEMOGRAPHIC CHARACTERISTICS

(percentage distribution)*

2015	Staff	Faculty
<i>Gender</i>		
Female	64	41
Male	33	56
Chose not to respond, transgender	3	3
Total	100	100
Number of respondents	840	1118
<i>Age of respondent</i>		
Under 25	3	0
25-29	14	2
30-39	25	25
40-49	25	28
50-59	25	25
60-69	8	16
70 and older	0	4
Total	100	100
Median Age	43	48.5
Number of respondents	835	1112
<i>Educational Attainment</i>		
High school graduate or less	3	0
Some college	14	**
College graduate	42	1
Graduate or professional degree	40	99
Other	1	0
Total	100	100
Number of respondents	842	1126
<i>Household Income (2014)</i>		
Less than \$50,000 [#]	24	4
\$50,000-74,999	23	8
\$75,000-\$99,000	20	10
\$100,000-\$149,999	21	22
\$150,000-\$199,999	8	20
\$200,000 or more	4	36
Total	100	100
Median Household Income (2014)	\$ 80,300	\$ 165,000
Number of respondents	801	1052

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

**Less than one half of one percent

[#] Assumes mean income is \$45,000

Appendix C: Response Distribution Tables for 2015

The following tables show complete survey responses to all questions dealing with travel and transportation, waste prevention and conservation, the natural environment, food, climate change, engagement, and U-M sustainability initiatives. Responses to demographic questions are shown in Appendix B.

Appendix Table C 1

TRAVEL & TRANSPORTATION - AWARENESS

(percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
How much do you know about:									
AAATA/"The Ride"									
A lot	17	6	10	12	17	12	28	13	18
A fair amount	26	20	21	30	25	24	29	21	22
A little	33	40	40	35	35	37	24	31	28
Not much/nothing	24	34	29	23	23	27	19	35	32
Total	100	100	100	100	100	100	100	100	100
U-M buses									
A lot	41	37	51	51	51	47	30	13	12
A fair amount	27	34	24	22	28	27	27	30	21
A little	20	19	16	18	13	17	26	31	33
Not much/nothing	12	10	9	9	8	9	17	26	34
Total	100	100	100	100	100	100	100	100	100
Biking in Ann Arbor									
A lot	12	8	9	12	13	11	16	9	18
A fair amount	20	15	18	21	28	21	18	18	22
A little	32	32	30	36	27	31	32	29	31
Not much/nothing	36	45	43	31	32	37	34	44	29
Total	100	100	100	100	100	100	100	100	100
Hourly car rental (e.g. Zip car)									
A lot	5	1	2	4	5	3	7	2	3
A fair amount	8	4	6	10	9	7	11	6	7
A little	24	19	22	26	26	23	26	22	27
Not much/nothing	63	76	70	60	60	67	56	70	63
Total	100	100	100	100	100	100	100	100	100
U-M Vanpools									
A lot								4	1
A fair amount								11	4
A little								31	19
Not much/nothing								54	76
Total								100	100

Appendix Table C 1 (continued)

TRAVEL & TRANSPORTATION - AWARENESS

(percentage distribution)*

2015	All	Undergraduate Students					Graduate	Staff	Faculty
	Students	Fresh	Soph	Junior	Senior	All	Students		
How much do you know about:									
U-M Greenride/iShareaRide									
A lot	0	1	0	1	2	1	0	2	0
A fair amount	2	0	1	3	0	2	2	2	1
A little	9	9	10	9	8	9	9	12	9
Not much/nothing	89	90	89	87	90	89	89	84	90
Total	100	100	100	100	100	100	100	100	100
AAATA ExpressRide									
A lot									
A fair amount									
A little									
Not much/nothing									
Total									
U-M Emergency Ride Home									
A lot									
A fair amount									
A little									
Not much/nothing									
Total									
Arbor Bike									
A lot	2	1	1	4	3	2	1	1	1
A fair amount	5	5	7	6	6	6	4	5	4
A little	26	21	23	27	29	25	29	13	19
Not much/nothing	67	73	69	63	62	67	66	81	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	2460	1068	327	341	298	2034	426	836	1134
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Appendix Table C2

TRAVEL & TRANSPORTATION - BEHAVIOR

(percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
During the past year, how often did you do the following to travel between where you lived and campus:									
Drive a car and park on campus									
Never	51	78	69	48	38	57	40		
Rarely	20	13	17	21	23	18	23		
Sometimes	18	7	13	23	26	18	18		
Always/Most of the time	11	2	1	8	13	7	19		
Total	100	100	100	100	100	100	100		
Park and ride									
Never	77	80	78	80	77	78	73		
Rarely	9	9	10	8	11	10	9		
Sometimes	8	7	7	7	7	7	8		
Always/Most of the time	6	4	5	5	5	5	10		
Total	100	100	100	100	100	100	100		
Walk									
Never	12	8	4	7	7	7	22		
Rarely	6	3	2	6	5	4	11		
Sometimes	16	12	10	13	13	12	23		
Always/Most of the time	66	77	84	74	75	77	44		
Total	100	100	100	100	100	100	100		
Bike									
Never	67	81	72	62	63	69	63		
Rarely	10	6	10	10	11	9	11		
Sometimes	12	7	7	13	15	11	14		
Always/Most of the time	11	6	11	15	11	11	12		
Total	100	100	100	100	100	100	100		
Take an AAATA bus									
Never	55	67	59	57	62	61	43		
Rarely	18	20	25	20	15	20	14		
Sometimes	15	10	12	14	17	13	20		
Always/Most of the time	12	3	4	9	6	6	23		
Total	100	100	100	100	100	100	100		
Take a U-M bus									
Never	30	20	15	26	30	24	42		
Rarely	17	18	17	17	20	18	16		
Sometimes	22	20	28	21	22	22	21		
Always/Most of the time	31	42	40	36	28	36	21		
Total	100	100	100	100	100	100	100		

Appendix Table C2 (continued)

TRAVEL & TRANSPORTATION - BEHAVIOR

(percentage distribution)*

2015	All	Undergraduate Students					Graduate	Staff	Faculty
	Students	Fresh	Soph	Junior	Senior	All	Students		
During the past year, how often did you do the following to travel between where you lived and campus:									
Carpool									
Never	64	66	56	61	51	59	73		
Rarely	19	20	24	21	22	22	15		
Sometimes	15	13	19	16	23	17	10		
Always/Most of the time	2	1	1	2	4	2	2		
Total	100	100	100	100	100	100	100		
Use U-M Greenride/iShareaRide									
Never	98	99	98	97	98	98	98		
Rarely	2	1	1	1	2	2	1		
Sometimes	0	0	1	1	**	0	1		
Always/Most of the time	0	0	0	1	0	0	0		
Total	100	100	100	100	100	100	100		
Vanpools									
Never	98	98	97	98	98	98	99		
Rarely	1	1	2	1	2	1	1		
Sometimes	1	1	1	1	0	1	0		
Always/Most of the time	0	0	**	0	**	0	**		
Total	100	100	100	100	100	100	100		
AAATA ExpressRide									
Never									
Rarely									
Sometimes									
Always/Most of the time									
Total									
Use motorcycle, moped, or scooter									
Never	97	98	97	95	97	97	97		
Rarely	1	1	2	2	2	1	1		
Sometimes	1	1	1	2	1	1	1		
Always/Most of the time	1	0	**	1	0	1	1		
Total	100	100	100	100	100	100	100		

Appendix Table C2 (continued)

TRAVEL & TRANSPORTATION - BEHAVIOR

(percentage distribution)*

2015	All	Undergraduate Students					Graduate	Staff	Faculty
	Students	Fresh	Soph	Junior	Senior	All	Students		
<i>Since the start of the fall semester, how do you most often travel to and from campus?</i>									
Drive a car	12	8	4	7	12	8	19		
Walk	47	51	65	53	56	56	33		
Bike	8	4	7	10	10	8	10		
Ride the bus	24	29	18	21	18	22	27		
Ride the bus and bike	2	1	1	2	1	1	3		
Ride share	2	5	2	2	1	2	1		
Motorcycle, moped, or scooter	1	0	**	1	**	0	1		
Park and ride	3	1	1	2	2	2	4		
Other	1	1	2	2	0	1	2		
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									
Never								6	6
Rarely								8	11
Sometimes								11	11
Always/Most of the time								75	70
Total								100	98
Park and Ride									
Never								75	86
Rarely								10	8
Sometimes								9	4
Always/Most of the time								6	2
Total								100	100
Walk									
Never								76	56
Rarely								9	15
Sometimes								9	18
Always/Most of the time								6	11
Total								100	100
Bike									
Never								86	67
Rarely								5	12
Sometimes								6	12
Always/Most of the time								3	9
Total								100	100

Appendix Table C2 (continued)

TRAVEL & TRANSPORTATION - BEHAVIOR

(percentage distribution)*

2015	All	Undergraduate Students					Graduate	Staff	Faculty
	Students	Fresh	Soph	Junior	Senior	All	Students		
During the past year, how often did you do the following travel to/from your home and your U-M workplace?									
Take an AAATA bus									
Never								74	65
Rarely								10	14
Sometimes								8	14
Always/Most of the time								8	7
Total								100	100
Take a U-M bus									
Never								67	76
Rarely								11	11
Sometimes								14	10
Always/Most of the time								8	3
Total								100	100
Carpool									
Never								78	87
Rarely								12	7
Sometimes								8	4
Always/Most of the time								2	2
Total								100	100
Use U-M Greenride/iShareaRide									
Never								99	98
Rarely								1	1
Sometimes								**	0
Always/Most of the time								0	1
Total								100	100
U-M Vanpools									
Never								96	98
Rarely								1	1
Sometimes								1	0
Always/Most of the time								2	1
Total								100	100
AAATA ExpressRide									
Never									
Rarely									
Sometimes									
Always/Most of the time									
Total									

Appendix Table C2 (continued)

TRAVEL & TRANSPORTATION - BEHAVIOR

(percentage distribution)*

2015	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>									
<hr/>									
Use motorcycle, moped, or scooter									
Never							97		97
Rarely							2		1
Sometimes							1		1
Always/Most of the time							0		1
Total							100		100
Worked from home/telecommuted									
Never							77		86
Rarely							14		8
Sometimes							8		4
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>									
<hr/>									
Drive a car							77		73
Walk							3		9
Bike							2		8
Ride the bus							6		4
Ride the bus and bike							1		1
Motorcycle, moped, or scooter							**		0
Park and Ride							5		2
Ride share							2		2
Other							4		1
Total							100		100

Appendix Table C2 (continued)

TRAVEL & TRANSPORTATION - BEHAVIOR

(percentage distribution)*

2015	All	Undergraduate Students					Graduate	Staff	Faculty
	Students	Fresh	Soph	Junior	Senior	All	Students		
<i>Since the beginning of the fall semester, how do you most often travel to/from home to your work place?</i>									
Drive a car								78	73
Walk								3	8
Bike								2	9
Ride the bus								7	4
Ride the bus and bike								0	1
Motorcycle, moped, or scooter								0	0
Park and Ride								4	2
Ride share								2	2
Other								4	1
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.

** Less than one-half of one percent

Number of respondents	2446	1069	324	340	293	2026	420	805	1095
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Appendix Table 3
TRAVEL & TRANSPORTATION - OTHER
 (percentage distribution)*

2015	All	Undergraduate Students					Graduate	Staff	Faculty
	Students	Fresh	Soph	Junior	Senior	All	Students		
When you moved to your current residence, how important were each of the following reasons?									
Being able to walk or bike to work/campus									
Very important	67	64	83	76	74	73	56	11	27
Somewhat important	15	14	9	13	14	13	18	10	21
Not that important	7	6	3	5	4	5	11	11	18
Not at all important	4	2	2	2	4	3	6	22	15
Didn't think about it	7	14	3	4	4	6	9	46	19
Total	100	100	100	100	100	100	100	100	100
Being able to take the bus to places work/campus									
Very important	39	37	37	39	29	35	47	14	16
Somewhat important	23	26	24	24	22	24	21	11	22
Not that important	14	13	16	14	18	15	11	12	19
Not at all important	7	20	5	9	12	8	6	19	19
Didn't think about it	17	10	18	14	19	18	15	44	24
Total	100	106	100	100	100	100	100	100	100
Having a lower impact on the environment									
Very important	13	13	13	10	9	11	15	10	17
Somewhat important	24	28	22	24	19	23	26	23	33
Not that important	19	19	20	26	13	20	18	13	16
Not at all important	6	4	5	5	9	6	6	8	7
Didn't think about it	38	36	40	35	50	40	35	46	27
Total	100	100	100	100	100	100	100	100	100
Which U-M parking permit do you have?									
Gold								1	20
Blue								36	47
Yellow								21	3
Orange								7	3
Daily AVI or Scratch-off								4	7
Shared Carpool Permit; Color?								1	0
No permit								30	20
Total								100	100

Appendix Table 3 (continued)

TRAVEL & TRANSPORTATION - OTHER

(percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
<i>What is the primary reason you drive a car to work?**</i>									
Convenience								29	32
Work schedule								14	18
Home/family schedule								11	18
Length of commute								40	23
Other								6	9
Total								100	100
<i>Since January 2015, what is your estimated university-sponsored air travel?</i>									
No University-sponsored air travel	82	93	87	89	90	90	69	79	28
Since January 2015, what is your estimated university-sponsored air travel?	9	3	4	4	4	4	17	15	22
5,000-9,999 miles (e.g. two round trip domestic flights or one round trip flight to Europe or Latin America)	4	1	4	3	2	3	7	4	20
10,000-24,999 miles (e.g. multiple round trip domestic flights and/or one-two long distance round trip international flights)	4	3	5	3	3	3	6	2	22
25,000-49,999 miles (e.g. three-four long distance round trip international flights)	1	0	0	0	1	0	1	0	5
50,000 or more miles (frequent long distance air travel)	0	0	**	1	0	0	0	0	3
Total	100	100	100	100	100	100	100	100	100

** 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 665 and 943 respectively.

* 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	2478	1075	328	341	300	2046	430	655	817
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Appendix Table C4
WASTE PREVENTION & CONSERVATION - AWARENESS
 (percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
<hr/> <i>How much do you know about:</i> <hr/>									
Recycling glass									
A lot	14	8	16	13	15	13	18	18	23
A fair amount	30	27	28	35	33	31	29	32	35
A little	34	36	35	34	32	34	33	31	29
Not much//nothing	22	29	21	18	20	22	20	19	13
Total	100	100	100	100	100	100	100	100	100
Recycling plastic									
A lot	20	20	23	20	19	20	18	21	24
A fair amount	36	39	36	39	38	38	34	35	38
A little	33	32	32	32	31	32	35	30	28
Not much//nothing	11	9	9	9	12	10	13	14	10
Total	100	100	100	100	100	100	100	100	100
Recycling paper									
A lot	25	28	31	24	25	27	22	32	32
A fair amount	38	39	39	40	37	39	36	38	40
A little	29	26	25	28	29	27	32	24	22
Not much//nothing	8	7	5	8	9	7	10	6	6
Total	100	100	100	100	100	100	100	100	100
Recycling electronic waste									
A lot	6	3	7	7	8	6	4	13	13
A fair amount	13	11	10	12	16	12	13	22	25
A little	33	30	35	39	31	34	33	31	34
Not much//nothing	48	56	48	42	45	48	50	34	28
Total	100	100	100	100	100	100	100	100	100
Property Disposition services									
A lot	4	3	7	6	5	5	3	16	13
A fair amount	9	7	7	9	9	8	10	24	27
A little	24	19	24	23	21	22	27	27	29
Not much//nothing	63	71	62	62	65	65	60	33	31
Total	100	100	100	100	100	100	100	100	100
Composting									
A lot	6	5	9	5	8	7	4	5	6
A fair amount	12	18	13	11	11	13	11	9	9
A little	31	31	36	37	30	33	28	21	21
Not much//nothing	51	46	42	47	51	47	57	65	64
Total	100	100	100	100	100	100	100	100	100

Appendix Table C4 (continued)
WASTE PREVENTION & CONSERVATION - AWARENESS
 (percentage distribution)*

2015	All	Undergraduate Students					Graduate	Staff	Faculty
	Students	Fresh	Soph	Junior	Senior	All	Students		
<i>How much do you know about:</i>									
<hr/>									
<hr/>									
The energy consumption of the building where you work									
A lot								5	6
A fair amount								11	12
A little								24	33
Not much//nothing								60	49
Total								100	100
The energy conservation features of the building where you work									
A lot								5	5
A fair amount								13	16
A little								30	37
Not much//nothing								52	42
Total								100	100

Appendix Table C5

WASTE PREVENTION & CONSERVATION - BEHAVIOR

(percentage distribution)*

2015	All	Undergraduate Students					Graduate	Staff	Faculty
	Students	Fresh	Soph	Junior	Senior	All	Students		
During the past year, how often did you do the following?									
Set the thermostat to 65 degrees or lower during cool or cold weather									
Never	22	29	27	21	17	23	19	11	12
Rarely	17	12	16	20	21	17	16	14	16
Sometimes	23	17	21	26	23	22	26	29	34
Always//Most of the time	23	12	18	24	28	21	27	43	36
Not applicable	15	30	18	9	11	17	12	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	29	39	38	27	28	33	23	18	16
Rarely	17	14	17	19	18	17	16	16	15
Sometimes	18	12	16	24	15	17	21	26	27
Always//Most of the time	15	6	8	15	16	11	21	31	35
Not applicable	21	29	21	15	23	22	19	9	7
Total	100	100	100	100	100	100	100	100	100
Turn off lights when I leave the room									
Never	1	0	1	0	1	0	1	**	**
Rarely	1	1	1	1	0	1	0	1	1
Sometimes	8	10	7	8	7	8	9	8	8
Always//Most of the time	90	89	91	89	92	90	90	90	91
Not applicable	0	0	0	2	**	1	0	1	0
Total	100	100	100	100	100	100	100	100	100
Unplug electrical appliances when not using them									
Never	11	12	10	10	12	11	12	13	16
Rarely	27	31	32	28	28	30	22	23	26
Sometimes	36	36	34	34	39	36	36	35	36
Always//Most of the time	25	20	24	26	21	22	30	27	21
Not applicable	1	1	**	2	**	1	0	2	1
Total	100	100	100	100	100	100	100	100	100
Use the power saving settings on my computer									
Never	10	12	14	9	8	11	9	7	4
Rarely	19	20	20	20	23	21	15	8	7
Sometimes	31	34	32	34	30	32	28	19	21
Always//Most of the time	39	33	33	34	38	35	47	59	65
Not applicable	1	1	1	3	1	1	1	7	3
Total	100	100	100	100	100	100	100	100	100

Appendix Table C5 (continued)

WASTE PREVENTION & CONSERVATION - BEHAVIOR

(percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
During the past year, how often did you do the following?									
Turn off my computer when not using it ^a									
Never	13	13	15	15	14	14	10	6	7
Rarely	23	21	30	26	28	26	18	11	14
Sometimes	27	26	25	22	28	26	29	14	25
Always//Most of the time	36	39	29	35	30	33	42	62	48
Not applicable	1	1	1	2	**	1	1	7	6
Total	100	100	100	100	100	100	100	100	100
Use a motion sensor/"smart" power strip									
Never	64	64	67	63	67	65	65	61	71
Rarely	10	9	10	11	10	10	10	7	6
Sometimes	9	8	8	8	10	8	8	12	8
Always//Most of the time	7	7	7	7	5	7	7	11	8
Not applicable	10	12	8	11	8	10	10	9	7
Total	100	100	100	100	100	100	100	100	100
Print double-sided									
Never	1	2	1	1	1	1	1		
Rarely	4	5	3	4	4	4	4		
Sometimes	17	20	14	17	16	17	17		
Always//Most of the time	78	73	82	77	79	78	78		
Not applicable	0	0	**	1	0	0	0		
Total	100	100	100	100	100	100	100		
Run washer only when I have a full load of clothes									
Never	1	1	1	1	0	1	1	1	1
Rarely	2	3	2	3	2	2	2	1	1
Sometimes	11	13	9	9	9	10	10	8	12
Always//Most of the time	84	79	85	86	86	84	84	88	84
Not applicable	2	4	3	1	3	3	3	2	2
Total	100	100	100	100	100	100	100	100	100
Limit time in the shower									
Never	7	10	6	5	6	7	7	8	4
Rarely	22	26	24	23	22	24	24	14	16
Sometimes	43	46	42	41	41	42	42	38	36
Always//Most of the time	28	18	28	31	30	27	27	40	44
Not applicable	0	**	0	**	1	0	0	0	0
Total	100	100	100	100	100	100	100	100	100

Question asked with reference to the workplace (see below)

Question asked with reference to the workplace (see below)

Appendix Table C5 (continued)

WASTE PREVENTION & CONSERVATION - BEHAVIOR

(percentage distribution)*

2015	All	Undergraduate Students					Graduate	Staff	Faculty
	Students	Fresh	Soph	Junior	Senior	All	Students		
	During the past year, how often did you do the following?								
	Recycle bottles, containers, and paper products								
Never	2	1	1	2	1	1	1	4	1
Rarely	5	5	5	6	4	5	5	4	0
Sometimes	25	31	27	25	25	27	27	14	5
Always//Most of the time	68	63	67	67	70	67	67	78	94
Not applicable	0	**	**	0	**	0	0	0	0
Total	100	100	100	100	100	100	100	100	100
Use a reusable water bottle, coffee mug, etc.									
Never	1	1	1	2	1	1	1	2	1
Rarely	4	4	4	4	2	4	4	1	2
Sometimes	22	20	19	22	24	22	22	12	12
Always//Most of the time	72	75	75	70	71	72	72	85	84
Not applicable	1	0	1	2	2	1	1	0	1
Total	100	100	100	100	100	100	100	100	100
Recycle electronic waste									
Never	23	29	31	25	21	26	26	8	4
Rarely	20	22	20	19	22	21	21	9	6
Sometimes	17	12	16	18	17	16	16	18	20
Always//Most of the time	17	10	12	17	18	14	14	54	62
Not applicable	23	27	21	21	22	23	23	11	8
Total	100	100	100	100	100	100	100	100	100
Bring reusable bags to the store									
Never	28	27	28	32	37	31	31	20	9
Rarely	22	18	22	28	24	23	23	14	12
Sometimes	24	23	25	22	21	23	23	38	36
Always//Most of the time	20	13	13	17	16	15	15	28	42
Not applicable	6	19	12	1	2	8	8	0	1
Total	100	100	100	100	100	100	100	100	100
Shop for things with minimal packaging									
Never	27	30	30	29	37	32	32	21	12
Rarely	29	30	34	29	26	30	30	22	21
Sometimes	31	25	24	31	25	26	26	41	47
Always//Most of the time	8	5	6	9	5	6	6	14	18
Not applicable	5	10	6	2	7	6	6	2	2
Total	100	100	100	100	100	100	100	100	100

Appendix Table C5 (continued)
WASTE PREVENTION & CONSERVATION - BEHAVIOR
 (percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
Use U-M Property Disposition Services to obtain items									
Never	69	64	69	71	74	69	69	Question asked with reference to the workplace (see below)	
Rarely	11	8	11	11	12	11	11		
Sometimes	7	7	7	8	4	6	6		
Always//Most of the time	2	2	2	2	1	2	2		
Not applicable	11	19	11	8	9	12	12		
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	25	28	26	23	27	26	26	17	21
Rarely	23	22	20	26	23	23	23	23	31
Sometimes	37	34	41	37	38	37	37	46	38
Always//Most of the time	12	9	8	13	10	10	10	13	9
Not applicable	3	7	5	1	2	4	4	1	1
Total	100	100	100	100	100	100	100	100	100
Compost food scraps									
Never	54	43	48	58	65	54	54	52	40
Rarely	17	17	22	20	15	18	18	15	17
Sometimes	17	22	17	14	12	16	16	17	16
Always//Most of the time	8	10	5	7	6	7	7	14	25
Not applicable	4	8	8	1	2	5	5	2	2
Total	100	100	100	100	100	100	100	100	100
Buy products (besides food) that carry some type of eco-label or certification									
Never	23	22	25	20	31	24	24	16	10
Rarely	27	28	26	28	27	28	28	26	23
Sometimes	39	36	39	41	33	37	37	48	53
Always//Most of the time	7	5	4	9	6	6	6	10	13
Not applicable	4	9	6	2	3	5	5	0	1
Total	100	100	100	100	100	100	100	100	100
During the past year, how often did you do the following <u>at work</u> when you had the opportunity?									
Turn off the lights when I leave the room									
Never								4	1
Rarely								3	1
Sometimes								20	12
Always//Most of the time								67	83
Not applicable								6	3
Total								100	100

Appendix Table C5 (continued)

WASTE PREVENTION & CONSERVATION - BEHAVIOR

(percentage distribution)*

2015	All	Undergraduate Students					Graduate	Staff	Faculty
	Students	Fresh	Soph	Junior	Senior	All	Students		
Use the power saving settings on the computer									
Never								11	5
Rarely								9	8
Sometimes								17	19
Always//Most of the time								55	65
Not applicable								8	3
Total								100	100
Turn off my computer when I leave work									
Never								18	13
Rarely								12	16
Sometimes								12	14
Always//Most of the time								47	49
Not applicable								11	8
Total								100	100
Use a motion sensor/"smart" power strip									
Never								47	50
Rarely								6	8
Sometimes								7	7
Always//Most of the time								20	24
Not applicable								20	11
Total								100	100
Print double-sided									
Never								9	4
Rarely								9	10
Sometimes								30	26
Always//Most of the time								45	58
Not applicable								7	2
Total								100	100
Recycle bottles, containers, and paper products									
Never								1	1
Rarely								1	1
Sometimes								15	7
Always//Most of the time								82	91
Not applicable								1	0
Total								100	100

Appendix Table C5 (continued)

WASTE PREVENTION & CONSERVATION - BEHAVIOR
(percentage distribution)*

2015	All	Undergraduate Students					Graduate	Staff	Faculty
	Students	Fresh	Soph	Junior	Senior	All	Students		
Use a reusable water bottle, coffee cup, travel mug, etc.									
Never								3	2
Rarely								5	4
Sometimes								16	20
Always//Most of the time								75	72
Not applicable								1	2
Total								100	100
Use U-M Property Disposition Services to obtain items such as computers, furniture, and equipment									
Never								40	36
Rarely								14	19
Sometimes								18	19
Always//Most of the time								10	11
Not applicable								18	15
Total								100	100
How important is your behavior to conserving energy in the building where you work?									
Very Important								39	38
Somewhat important								46	49
Not that important								13	12
Not at all important								2	1
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.

** 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	2468	1069	327	341	3011	2038	430	837	1131
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Appendix Table C6

WASTE PREVENTION & CONSERVATION - OTHER

(percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
Do you have any of the following at your current residence?									
Recycling bins									
Yes	91	97	91	89	91	92	89	83	98
No	7	2	8	9	7	6	8	17	2
Don't know	2	1	1	2	2	2	3	**	**
Total	100	100	100	100	100	100	100	100	100
Compost bin									
Yes	20	20	13	17	20	18	23	28	51
No	62	43	65	71	75	63	61	69	47
Don't know	18	37	22	12	5	19	16	3	2
Total	100	100	100	100	100	100	100	100	100
Programmable thermostat									
Yes	56	39	59	61	59	54	60	79	85
No	34	44	30	33	32	35	31	20	15
Don't know	10	17	11	6	9	11	9	1	**
Total	100	100	100	100	100	100	100	100	100
Water-saving items (e.g. low-flow faucets)									
Yes	30	33	29	25	23	28	34	64	63
No	38	23	32	43	46	36	41	29	29
Don't know	32	44	39	32	31	36	25	7	8
Total	100	100	100	100	100	100	100	100	100
Energy Star appliances									
Yes	28	17	23	28	23	23	37	76	83
No	30	25	24	35	39	31	28	14	9
Don't know	42	58	53	37	38	46	35	10	8
Total	100	100	100	100	100	100	100	100	100
Motion sensor for shutting off electronics									
Yes	11	11	14	11	10	11	11	12	10
No	69	56	61	76	77	68	72	85	87
Don't know	20	33	25	13	13	21	17	3	3
Total	100	100	100	100	100	100	100	100	100

Appendix Table C6 (continued)

WASTE PREVENTION & CONSERVATION - OTHER

(percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
Do you have any of the following at your current residence?									
Compact fluorescent light bulbs or LED light bulbs									
Yes	55	41	43	57	57	50	63	88	92
No	20	15	22	21	22	20	21	10	7
Don't know	25	44	35	22	21	30	16	2	1
Total	100	100	100	100	100	100	100	100	100
Renewable energy systems, like solar or geothermal									
Yes	4	3	4	3	3	3	4	8	6
No	66	40	52	75	80	62	74	81	92
Don't know	30	57	44	22	17	35	22	11	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.									
Number of respondents	2483	1077	329	344	300	2051	432	846	1142

Appendix Table C7

NATURAL ENVIRONMENT - AWARENESS
(percentage distribution)

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
<hr/> <i>How much do you know about:</i> <hr/> <hr/>									
Disposing of hazardous waste materials (i.e. engine oil, medications, etc.)									
A lot	7	5	4	7	5	5	8	16	16
A fair amount	18	18	12	19	15	16	22	34	36
A little	35	33	37	35	39	36	33	35	35
Not much/nothing	40	44	47	39	41	43	37	15	13
Total	100	100	100	100	100	100	100	100	100
Recognizing invasive plant species									
A lot	4	5	5	6	2	4	3	5	8
A fair amount	13	13	13	11	14	13	14	17	17
A little	30	29	29	31	33	30	28	32	36
Not much/nothing	53	53	54	52	51	53	55	46	39
Total	100	100	100	100	100	100	100	100	100
Taking care of residential property in an environmentally-friendly way									
A lot	8	11	9	9	6	9	8	12	14
A fair amount	28	31	29	28	27	29	26	31	33
A little	38	37	40	39	38	38	37	40	39
Not much/nothing	26	21	22	24	29	24	29	17	14
Total	100	100	100	100	100	100	100	100	100
Protecting rivers, streams, & lakes - tributaries, habitat quality, & native species									
A lot	11	11	13	12	9	11	9	13	16
A fair amount	28	32	32	27	26	29	27	31	29
A little	38	38	32	39	39	37	40	38	41
Not much/nothing	23	19	24	22	26	23	24	18	14
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	2481	1076	328	344	300	2048	433	850	1138

Appendix Table 8

NATURAL ENVIRONMENT - BEHAVIOR
(percentage distribution)*

2015	All	Undergraduate Students					Graduate	Staff	Faculty
	Students	Fresh	Soph	Junior	Senior	All	Students		
<i>During the past year at your current residence, how often did you:**</i>									
Use fertilizer on your lawn									
Regularly	2	3	1	3	**	2	2	13	10
Sometimes	3	15	2	4	2	3	4	18	20
Rarely	4	17	3	3	2	3	5	16	19
Never	36	13	38	36	44	39	32	34	36
Not applicable	55	52	56	54	52	53	57	19	15
Total	100	100	100	100	100	100	100	100	100
Use commercial herbicides or pesticides									
Regularly	1	0	0	2	0	1	1	4	6
Sometimes	3	7	3	5	2	3	3	17	17
Rarely	4	19	4	1	3	3	6	22	24
Never	38	29	36	40	43	41	33	38	39
Not applicable	54	45	57	52	52	52	57	19	14
Total	100	100	100	100	100	100	100	100	100
Water your lawn									
Regularly	3	11	1	3	2	2	4	9	12
Sometimes	4	33	4	5	4	5	4	20	19
Rarely	5	3	6	3	4	4	6	20	23
Never	33	9	30	37	39	36	29	33	31
Not applicable	55	44	59	52	51	53	57	18	15
Total	100	100	100	100	100	100	100	100	100
<i>At your current residence, have you:**</i>									
Installed a rain barrel									
Yes	2	0	2	2	1	1	2	8	11
No	55	68	53	60	65	62	47	75	75
Not applicable	43	32	45	38	34	37	51	17	14
Total	100	100	100	100	100	100	100	100	100
Installed a rain garden									
Yes	2	0	1	1	1	1	2	2	5
No	54	65	51	59	64	60	46	81	81
Not applicable	44	35	48	40	35	39	52	17	14
Total	100	100	100	100	100	100	100	100	100
Eliminated invasive species from your yard or garden									
Yes	6	13	2	4	6	5	6	29	37
No	44	47	38	49	54	49	38	48	46
Not applicable	50	40	60	47	40	46	56	23	17
Total	100	100	100	100	100	100	100	100	100

Appendix Table 8 (continued)

NATURAL ENVIRONMENT - BEHAVIOR

(percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
During the past year at your current residence, how often did you:**									
Intentionally planted native species in your lawn or garden									
Yes	5	0	3	5	5	4	6	28	33
No	45	59	40	50	55	51	38	51	51
Not applicable	50	41	57	45	40	45	56	21	16
Total	100	100	100	100	100	100	100	100	100
Converted all/part of lawn to native/natural plantings									
Yes	3	0	2	3	2	3	3	15	20
No	47	58	41	50	58	52	41	65	64
Not applicable	50	42	57	47	40	45	56	20	16
Total	100	100	100	100	100	100	100	100	100
Disposed of hazardous materials by taking them to a designated disposal facility									
Yes	12	15	5	8	7	7	17	55	61
No	42	37	44	46	54	49	34	23	20
Not applicable	46	48	51	46	39	44	49	22	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	1078	33	141	280	276	730	348	849	1140
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Appendix Table C9

NATURAL ENVIRONMENT - OTHER

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			

Items were deleted from the questionnaires in Year 2

Appendix Table C10

FOOD - AWARENESS

(percentage distribution)*

2015	All	Undergraduate Students					Graduate	Staff	Faculty
	Students	Fresh	Soph	Junior	Senior	All			
<hr/> <i>How much do you know about:</i> <hr/>									
Locally grown or processed food									
A lot	15	13	14	14	14	14	17	22	28
A fair amount	36	34	36	35	36	35	38	43	42
A little	37	37	37	40	37	38	35	30	27
Not much/nothing	12	16	13	11	13	13	10	5	3
Total	100	100	100	100	100	100	100	100	100
Organic food									
A lot	18	15	17	15	18	16	21	23	29
A fair amount	40	41	37	43	40	41	40	45	46
A little	32	31	35	33	31	32	32	28	23
Not much/nothing	10	13	11	9	11	11	7	4	2
Total	100	100	100	100	100	100	100	100	100
Fair trade food									
A lot	11	9	11	10	10	10	12	12	20
A fair amount	27	22	20	26	29	24	32	31	38
A little	36	31	38	39	36	36	37	32	31
Not much/nothing	26	38	31	25	25	30	19	25	11
Total	100	100	100	100	100	100	100	100	100
Food from humanely-treated animals									
A lot	14	12	15	12	14	13	15	14	23
A fair amount	30	30	31	30	31	31	29	34	37
A little	35	35	32	37	37	35	34	35	31
Not much/nothing	21	23	22	21	18	21	22	17	9
Total	100	100	100	100	100	100	100	100	100
Food from animals that were not given hormones or antibiotics									
A lot	15	15	16	16	15	15	15	19	25
A fair amount	34	32	33	33	36	34	34	39	42
A little	33	33	34	35	34	34	32	31	28
Not much/nothing	18	20	17	16	15	17	19	11	5
Total	100	100	100	100	100	100	100	100	100

Appendix Table C10 (continued)
FOOD - AWARENESS
 (percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
How much do you know about:									
Grass-fed beef									
A lot	15	13	14	13	17	14	16	19	23
A fair amount	30	29	29	31	32	31	29	37	37
A little	33	33	34	35	32	33	32	31	29
Not much/nothing	22	25	23	21	19	22	23	13	11
Total	100	100	100	100	100	100	100	100	100
Fish from sustainable fisheries									
A lot	11	10	11	9	11	11	12	12	19
A fair amount	25	26	23	26	26	25	26	28	36
A little	35	31	39	33	36	34	34	35	32
Not much/nothing	29	33	27	32	27	30	28	25	13
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	2481	1076	328	342	299	2049	429	847	1138

Appendix Table C11

FOOD - BEHAVIOR

(percentage distribution)*

2015	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	62	4	44	75	82	52	81		
In campus dining facilities	33	95	54	20	13	45	10		
Elsewhere	5	1	2	5	5	3	9		
Total	100	100	100	100	100	100	100		
Number of respondents									
<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	13	10	11	13	10	11	15	21	20
Sometimes	53	39	48	46	54	50	58	64	70
Rarely	16	15	21	19	12	16	15	9	6
Never	4	12	1	4	5	4	3	2	1
Don't Know	12	19	17	17	16	17	8	3	3
I don't eat this	2	5	2	1	3	2	1	1	**
Total	100	100	100	100	100	100	100	100	100
Organic Food									
Always/Most of the time	16	14	18	17	16	17	14	17	25
Sometimes	48	29	41	51	41	44	53	57	57
Rarely	21	25	20	17	22	20	23	18	14
Never	5	10	5	6	6	6	4	4	2
Don't Know	8	17	14	8	11	11	4	2	1
I don't eat this	2	5	2	1	4	2	2	2	1
Total	100	100	100	100	100	100	100	100	100
Fair trade food									
Always/Most of the time	6	0	7	7	6	6	5	8	10
Sometimes	31	21	21	27	31	27	36	34	50
Rarely	24	13	23	26	19	22	26	20	20
Never	9	12	6	8	10	9	8	11	5
Don't Know	28	48	40	30	31	33	23	25	14
I don't eat this	2	6	3	2	3	3	2	2	1
Total	100	100	100	100	100	100	100	100	100
Food from humanely-treated animals									
Always/Most of the time	10	7	11	8	9	9	11	15	20
Sometimes	30	29	20	33	29	29	31	35	43
Rarely	17	8	15	19	16	17	17	14	13
Never	7	12	5	7	8	7	7	7	3
Don't Know	28	37	37	27	31	31	25	25	16
I don't eat this	8	7	12	6	7	7	9	4	5
Total	100	100	100	100	100	100	100	100	100

Appendix Table C11 (continued)

FOOD - BEHAVIOR

(percentage distribution)*

2015	All	Undergraduate Students					Graduate	Staff	Faculty
	Students	Fresh	Soph	Junior	Senior	All	Students		
During the past year, about how often did you (or other household members) buy the following:***									
Food from animals that were not given hormones or antibiotics									
Always/Most of the time	14	8	13	11	15	13	16	23	31
Sometimes	32	25	24	35	32	32	33	40	42
Rarely	14	7	13	15	13	14	13	11	9
Never	6	13	5	7	6	6	6	5	3
Don't Know	25	41	32	25	27	27	23	17	10
I don't eat this	9	6	13	7	7	8	9	4	5
Total	100	100	100	100	100	100	100	100	100
Number of respondents									
Grass-fed beef									
Always/Most of the time	8	1	6	7	10	8	9	16	16
Sometimes	23	23	19	23	26	24	21	35	38
Rarely	16	8	16	16	12	14	18	16	16
Never	11	14	8	13	13	12	10	7	6
Don't Know	24	42	30	26	25	26	22	18	10
I don't eat this	18	12	21	15	14	16	20	8	14
Total	100	100	100	100	100	100	100	100	100
Fish from sustainable fisheries									
Always/Most of the time	6	2	6	6	5	5	7	10	16
Sometimes	20	19	15	23	19	20	20	27	39
Rarely	15	7	14	17	12	14	15	13	14
Never	11	17	9	10	14	12	10	10	4
Don't Know	29	44	35	25	30	30	28	26	17
I don't eat this	19	11	21	19	20	19	20	14	10
Total	100	100	100	100	100	100	100	100	100
During the past year, about how much of your grocery purchases were sustainable food?***									
All/most	6	3	5	5	4	5	8	8	11
More than half	16	13	14	17	15	15	17	18	24
Half	17	21	17	13	17	16	18	16	17
Less than half	29	16	27	30	29	29	29	29	25
None	4	10	1	5	4	4	4	2	1
I don't know	28	37	36	30	31	31	24	27	22
Total	100	100	100	100	100	100	100	100	100

Appendix Table C11 (continued)

FOOD - BEHAVIOR

(percentage distribution)*

2015	All	Undergraduate Students					Graduate	Staff	Faculty
	Students	Fresh	Soph	Junior	Senior	All	Students		
<i>During the past week, how often have you included meat as part of your daily diet?</i>									
Daily/almost daily	51	66	54	53	47	55	43	46	33
3-4 days	24	17	21	24	29	23	25	30	32
1-2 days	15	10	12	13	17	13	20	19	25
Never	10	7	13	10	7	9	12	5	10
Total	100	100	100	100	100	100	100	100	100
<i>During the past year, have you:</i>									
Grown fruits/vegetables in a home garden?									
Yes	23	36	23	20	18	24	20	46	45
No	77	64	77	80	82	76	80	54	55
Total	100	100	100	100	100	100	100	100	100
Grown fruits/vegetables in a community garden?									
Yes	6	8	7	5	2	5	6	6	5
No	94	92	93	95	98	95	94	94	95
Total	100	100	100	100	100	100	100	100	100
Shopped at farmers markets/food stands?									
Yes	60	62	56	62	56	59	62	81	84
No	40	38	44	38	44	41	38	19	16
Total	100	100	100	100	100	100	100	100	100
Belonged to a CSA?									
Yes	5	4	4	4	1	3	8	6	11
No	95	96	96	96	99	97	92	94	89
Total	100	100	100	100	100	100	100	100	100
Visited U-Pick farms?									
Yes	15	13	11	12	13	12	18	31	28
No	85	87	89	88	87	88	82	69	72
Total	100	100	100	100	100	100	100	100	100
Raised animals for food?									
Yes	3	5	5	3	1	3	3	6	3
No	97	95	95	97	99	97	97	94	97
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 (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.

***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	1139	57	153	274	263	749	388	843	1137
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Appendix Table C12
FOOD - OTHER
 (percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
How important to you are the following when you buy sustainable food?***									
Nutrition									
Very important	63	43	63	62	63	62	64	70	70
Somewhat important	31	52	29	30	32	31	30	26	25
Not that important	5	5	8	7	4	6	5	3	4
Not at all important	1	0	0	1	1	1	1	1	1
Total	100	100	100	100	100	100	100	100	100
Taste									
Very important	66	41	60	68	70	67	65	73	69
Somewhat important	30	48	34	28	27	29	31	25	27
Not that important	3	11	6	3	3	4	3	2	3
Not at all important	1	0	0	1	0	**	1	**	1
Total	100	100	100	100	100	100	100	100	100
Supporting the local community									
Very important	30	7	25	27	25	25	35	50	51
Somewhat important	46	61	45	47	49	48	44	43	41
Not that important	20	27	25	24	19	22	18	7	7
Not at all important	4	5	5	2	7	5	3	**	1
Total	100	100	100	100	100	100	100	100	100
Protecting the environment									
Very important	36	12	34	32	33	32	39	49	39
Somewhat important	45	67	42	46	47	46	44	41	59
Not that important	16	19	20	19	14	17	15	9	2
Not at all important	3	2	4	3	6	5	2	1	0
Total	100	100	100	100	100	100	100	100	100

Appendix Table C12 (continued)

FOOD - OTHER

(percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
How important to you are the following when you buy sustainable food?***									
Avoiding synthetic pesticides/fertilizers, antibiotics/growth hormones									
Very important	45	36	38	44	41	42	49	64	64
Somewhat important	33	44	35	37	37	37	29	27	27
Not that important	17	20	17	15	15	15	18	6	7
Not at all important	5	0	10	4	7	6	4	3	2
Total	100	100	100	100	100	100	100	100	100
Affordability									
Very important	68	43	64	70	70	69	67	65	35
Somewhat important	25	34	22	24	25	24	27	30	48
Not that important	6	23	14	5	5	7	5	4	15
Not at all important	1	0	0	1	0	**	1	1	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 (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.

*** 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 was 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	770	35	96	180	178	488	0	282	600	884
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Appendix Table C13

CLIMATE CHANGE

(percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
<u><i>Do you think climate change is happening?</i></u>									
Yes	91	90	93	92	90	91	92	84	94
No	4	4	4	4	4	4	3	7	2
Don't know	5	6	3	4	6	5	5	9	4
Total	100	100	100	100	100	100	100	100	100
<u><i>If yes, how sure are you that climate change is happening?</i></u>									
Extremely sure	67	64	63	67	73	67	68	53	80
Mostly sure	23	24	28	23	19	23	24	29	16
Somewhat sure	9	11	8	9	7	9	8	16	4
Not at all sure	1	1	1	1	1	1	**	2	**
Total	100	100	100	100	100	100	100	100	100
Number of respondents	2251	956	305	319	272	1852	399	712	1068
<u><i>If no, how sure are you that climate change is not happening?</i></u>									
Extremely sure	19	16	31	29	13	21	13	30	13
Mostly sure	32	25	22	30	44	31	34	37	57
Somewhat sure	32	49	23	27	31	33	31	26	17
Not at all sure	17	10	24	14	12	15	22	7	13
Total	100	100	100	100	100	100	100	100	100
Number of respondents	98	48	12	13	11	84	14	63	26
<u><i>Assuming climate change is happening, do you think it is:</i></u>									
Caused mostly by human activity	46	43	44	45	45	44	48	35	57
Caused mostly by natural causes	3	4	2	5	1	3	5	6	2
Caused by both	50	52	53	49	53	52	46	57	40
None of the above because climate change is not happening	1	1	1	1	1	1	1	2	1
Total	100	100	100	100	100	100	100	100	100

Appendix Table C13 (continued)

CLIMATE CHANGE

(percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
<u>How important is climate change to you personally?</u>									
Not at all important	3	3	3	2	3	3	2	4	1
Not too important	11	11	12	14	15	13	8	11	5
Somewhat important	34	40	36	31	35	35	33	38	25
Very important	33	30	29	33	31	31	37	32	42
Extremely important	19	16	20	20	16	18	20	15	27
Total	100	100	100	100	100	100	100	100	100
<u>How well can you explain climate change to someone?</u>									
Very well	20	20	20	24	19	21	18	8	23
Fairly well	49	48	48	45	46	47	54	39	52
A little bit	28	29	29	27	31	29	27	44	23
Couldn't explain it at all	3	3	3	4	4	3	1	9	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 except for the second and third items above as respondents only received one of these questions based on their response to the first item.									
Number of respondents	98	48	12	13	11	84	14	63	26

Appendix Table C14

SUSTAINABILITY ENGAGEMENT AT U-M & ELSEWHERE

(percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
During the <u>past year</u> did you participate in any of the following at U-M?									
RecycleMania									
Yes	5	1	10	6	3	5	6	7	5
No	95	99	90	94	97	95	94	93	95
Total	100	100	100	100	100	100	100	100	100
Kill-a-Watt									
Yes	6	1	9	7	9	6	4		
No	94	99	91	93	91	94	96		
Total	100	100	100	100	100	100	100		
Earthfest									
Yes	10	7	16	17	14	13	5	4	3
No	90	93	84	83	86	87	95	96	97
Total	100	100	100	100	100	100	100	100	100
Zero Waste Events									
Yes	6	2	7	8	8	6	6	4	3
No	94	98	93	92	92	94	94	96	97
Total	100	100	100	100	100	100	100	100	100
e-Waste Recycling Event									
Yes	3	1	2	3	1	2	6	16	19
No	97	99	98	97	99	98	94	84	81
Total	100	100	100	100	100	100	100	100	100
Planet Blue Ambassadors Program									
Yes	7	4	8	8	10	7	4	11	6
No	93	96	92	92	90	93	96	89	94
Total	100	100	100	100	100	100	100	100	100
Sustainable Workplace Certification Program									
Yes								5	4
No								95	96
Total								100	100
Sustainable Lab Recognition Program									
Yes								3	4
No								97	96
Total								100	100

Appendix Table C14 (continued)

SUSTAINABILITY ENGAGEMENT AT U-M & ELSEWHERE

(percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
During the <u>past year</u> did you participate in any of the following at U-M?									
M Farmers Market									
Yes	21	14	22	26	29	23	19	29	17
No	79	86	78	74	71	77	81	71	83
Total	100	100	100	100	100	100	100	100	100
A UM organization dealing with sustainability									
Yes	15	9	19	18	18	16	12	7	8
No	85	91	81	82	82	84	88	93	92
Total	100	100	100	100	100	100	100	100	100
A UM course that addressed sustainability									
Yes	19	8	26	27	27	22	13		
No	81	92	74	73	73	78	87		
Total	100	100	100	100	100	100	100		
Other									
Yes	5	3	8	6	4	5	4	3	5
No	95	97	92	94	96	95	96	97	95
Total	100	100	100	100	100	100	100	100	100
Have you ever participated in any of the following at U-M?									
RecycleMania									
Yes	8	2	12	9	8	8	8	9	9
No	92	98	88	91	92	92	92	91	91
Total	100	100	100	100	100	100	100	100	100
Kill-a-Watt									
Yes	10	3	12	10	18	11	7		
No	90	97	88	90	82	89	93		
Total	100	100	100	100	100	100	100		
Earthfest									
Yes	14	9	19	20	18	16	9	6	7
No	86	91	81	80	82	84	91	94	93
Total	100	100	100	100	100	100	100	100	100

Appendix Table C14 (continued)

SUSTAINABILITY ENGAGEMENT AT U-M & ELSEWHERE

(percentage distribution)*

2015	All	Undergraduate Students					Graduate	Staff	Faculty
	Students	Fresh	Soph	Junior	Senior	All	Students		
Have you ever participated in any of the following at U-M? **									
Planet Blue Open House									
Yes									
No									
Total									
Zero Waste Events									
Yes	8	4	11	11	10	9	8	6	6
No	92	96	89	89	90	91	92	94	94
Total	100	100	100	100	100	100	100	100	100
e-Waste Recycling Event									
Yes	6	3	5	5	4	4	8	21	23
No	94	97	95	95	96	96	92	79	77
Total	100	100	100	100	100	100	100	100	100
Planet Blue Ambassadors Program									
Yes	9	6	10	11	14	10	7	14	11
No	91	94	90	89	56	90	93	86	89
Total	100	100	100	100	100	100	100	100	100
Sustainable Lab Recognition Program									
Yes								3	7
No								97	93
Total								100	100
M Farmers Market									
Yes	26	16	26	30	37	27	22	34	22
No	74	84	74	70	63	73	78	66	78
Total	100	100	100	100	100	100	100	100	100
Sustainable Workplace Certificate Program									
Yes								7	7
No								93	93
Total								100	100

Appendix Table C14 (continued)
SUSTAINABILITY ENGAGEMENT AT U-M & ELSEWHERE
 (percentage distribution)*

2015	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>									
A U-M organization dealing with									
Yes	20	12	26	26	26	22	17	11	13
No	80	88	74	74	74	78	84	89	87
Total	100	100	100	100	100	100	100	100	100
A U-M course that addressed sustainability									
Yes	24	11	32	32	34	27	19		
No	76	89	68	68	66	73	81		
Total	100	100	100	100	100	100	100		
<i>During the past year, have you done any of the following to promote environmental protection, energy/water conservation, etc.?</i>									
Given money to an organization or advocacy group supporting one of the above issues?									
Yes	17	18	16	16	13	16	18	26	45
No	83	100	84	84	87	84	82	74	55
Total	100	100	100	100	100	100	100	100	100
Volunteered for an organization or advocacy group supporting one of the above issues?									
Yes	25	32	29	30	23	28	19	9	9
No	75	100	71	70	77	72	81	91	91
Total	100	100	100	100	100	100	100	100	100
Served in a leadership position for an organization or advocacy group supporting one of the above issues?									
Yes	9	10	11	12	7	10	7	3	3
No	91	100	89	88	93	90	93	97	97
Total	100	100	100	100	100	100	100	100	100
Voted for a candidate for public office because of her/his position on any of the above issues?									
Yes	9	10	11	12	7	10	7	3	3
No	28	21	30	32	31	28	28	37	52
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.

**Percent reporting "Yes" include respondents who 1) say "Yes" to the previous "During the past year" question, and 2) those who said "No" to the "During the past year" and "Yes to the "Have you ever" question

Number of respondents	1922	890	243	251	198	1582	340	569	848
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Appendix Table C15

U-M SUSTAINABILITY INITIATIVES - AWARENESS & RATINGS

(percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
How aware are you of UM's efforts to:									
Conserve Energy									
Very aware	15	18	15	18	14	16	11	17	15
Somewhat aware	47	54	51	48	50	51	41	47	56
Not too aware	27	21	25	25	25	24	33	27	21
Not at all aware	11	7	9	9	11	9	15	9	8
Total	100	100	100	100	100	100	100	100	100
Encourage people to take a bus or bike									
Very aware	19	26	22	27	15	23	13	26	17
Somewhat aware	46	50	45	47	49	48	42	44	49
Not too aware	24	18	23	17	23	20	32	21	25
Not at all aware	11	6	10	9	13	9	13	9	9
Total	100	100	100	100	100	100	100	100	100
Promote ride sharing									
Very aware	12	17	14	16	9	14	9	26	15
Somewhat aware	32	39	38	32	33	35	26	46	46
Not too aware	36	32	33	34	34	33	41	20	28
Not at all aware	20	12	15	18	24	18	24	8	11
Total	100	100	100	100	100	100	100	100	100
Promote recycling									
Very aware	32	41	38	41	28	37	23	34	30
Somewhat aware	43	45	44	38	47	43	42	46	49
Not too aware	17	10	12	15	15	13	23	15	16
Not at all aware	8	4	6	6	10	7	12	5	5
Total	100	100	100	100	100	100	100	100	100
Promote food from sustainable sources									
Very aware	15	24	20	19	11	18	9	10	7
Somewhat aware	33	41	44	38	37	40	22	33	29
Not too aware	33	25	25	30	33	29	40	37	42
Not at all aware	19	10	11	13	19	13	29	20	22
Total	100	100	100	100	100	100	100	100	100
Reduce greenhouse gas emissions									
Very aware	12	15	13	18	12	14	9	9	7
Somewhat aware	32	41	37	32	32	36	24	29	34
Not too aware	36	34	32	33	36	34	40	40	41
Not at all aware	20	10	18	17	20	16	27	22	18
Total	100	100	100	100	100	100	100	100	100

Appendix Table C15 (continued)

U-M SUSTAINABILITY INITIATIVES - AWARENESS & RATINGS

(percentage distribution)*

2015	All	Undergraduate Students					Graduate	Staff	Faculty
	Students	Fresh	Soph	Junior	Senior	All	Students		
How aware are you of UM's efforts to:									
Maintain campus grounds in an environmentally-friendly manner									
Very aware	14	18	17	19	12	17	9	12	10
Somewhat aware	34	43	37	33	36	37	26	36	36
Not too aware	32	29	31	30	30	30	37	33	35
Not at all aware	20	10	15	18	22	16	28	19	19
Total	100	100	100	100	100	100	100	100	100
Protect the Huron River									
Very aware	10	12	12	12	9	11	7	9	8
Somewhat aware	26	28	25	29	27	27	22	27	26
Not too aware	35	37	38	34	33	36	34	37	39
Not at all aware	29	23	25	25	31	26	37	27	27
Total	100	100	100	100	100	100	100	100	100
Promote Composting									
Very aware	10	17	12	9	6	11	8	7	5
Somewhat aware	25	35	28	26	24	28	20	22	19
Not too aware	35	31	37	36	39	36	34	40	40
Not at all aware	30	17	23	29	31	25	38	31	36
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	2463	1071	326	339	294	2034	427	843	1128
How would you rate UM's efforts to:***									
Conserve energy									
(5) Very good (A)	17	22	16	21	16	19	13	16	14
(4) Good (B)	48	56	49	44	47	49	45	45	49
(3) Fair (C)	28	19	29	29	28	26	32	33	30
(2) Poor (D)	6	2	5	5	6	5	8	5	6
(1) Very poor (F)	1	1	1	1	3	1	2	1	1
Total	100	100	100	100	100	100	100	100	100
Mean Rating	3.74	3.96	3.74	3.79	3.67	3.8	3.59	3.7	3.69
Encourage people to take bus/bike									
(5) Very good (A)	27	39	30	32	21	30	20	25	17
(4) Good (B)	44	41	43	48	44	44	46	42	42
(3) Fair (C)	23	17	22	15	26	20	27	28	33
(2) Poor (D)	5	3	4	4	8	5	6	4	7
(1) Very poor (F)	1	**	1	1	1	1	1	1	1
Total	100	100	100	100	100	100	100	100	100
Mean Rating	3.91	4.16	3.97	4.06	3.76	3.97	3.78	3.86	3.67

Appendix Table C15 (continued)

U-M SUSTAINABILITY INITIATIVES - AWARENESS & RATINGS

(percentage distribution)*

2015	All	Undergraduate Students					Graduate	Staff	Faculty
	Students	Fresh	Soph	Junior	Senior	All	Students		
	How would you rate UM's efforts to:***								
Promote ride sharing									
(5) Very good (A)	12	15	13	13	10	13	11	25	15
(4) Good (B)	31	37	28	34	30	33	29	39	39
(3) Fair (C)	39	34	39	37	37	36	44	29	36
(2) Poor (D)	16	13	18	13	21	16	14	6	9
(1) Very poor (F)	2	1	2	3	2	2	2	1	1
Total	100	100	100	100	100	100	100	100	100
Mean Rating	3.35	3.52	3.32	3.41	3.25	3.39	3.33	3.81	3.58
Promote recycling									
(5) Very good (A)	34	44	37	36	33	38	28	31	28
(4) Good (B)	41	40	42	41	40	40	41	39	43
(3) Fair (C)	20	14	16	18	23	18	24	26	23
(2) Poor (D)	4	2	4	4	3	3	6	3	5
(1) Very poor (F)	1	**	1	1	1	1	1	1	1
Total	100	100	100	100	100	100	100	100	100
Mean Rating	4.03	4.26	4.1	4.07	4.01	4.11	3.89	3.96	3.92
Promote food from sustainable sources									
(5) Very good (A)	16	23	18	17	11	17	13	9	7
(4) Good (B)	34	39	37	35	34	37	28	33	31
(3) Fair (C)	37	29	34	36	38	34	43	44	47
(2) Poor (D)	12	8	10	10	15	11	14	12	13
(1) Very poor (F)	1	1	1	2	2	1	2	2	2
Total	100	100	100	100	100	100	100	100	100
Mean Rating	3.52	3.75	3.61	3.55	3.37	3.58	3.36	3.35	3.28
Reduce greenhouse gas emissions									
(5) Very good (A)	13	15	12	14	11	13	10	10	8
(4) Good (B)	35	41	36	38	33	37	30	35	35
(3) Fair (C)	40	36	38	37	40	38	46	43	46
(2) Poor (D)	10	7	10	9	13	10	12	10	9
(1) Very poor (F)	2	1	3	2	3	2	2	2	2
Total	100	100	99	100	100	100	100	100	100
Mean Rating	3.47	3.62	3.41	3.53	3.36	3.49	3.34	3.41	3.38
Maintain campus grounds in an environmentally									
(5) Very good (A)	17	21	18	19	13	18	16	17	14
(4) Good (B)	42	47	40	38	50	44	36	41	44
(3) Fair (C)	32	27	32	34	29	30	37	36	36
(2) Poor (D)	7	4	8	7	5	6	10	5	5
(1) Very poor (F)	2	1	2	2	3	2	1	1	1
Total	100	100	100	100	100	100	100	100	100
Mean Rating	3.65	3.83	3.64	3.65	3.65	3.7	3.56	3.68	3.65

Appendix Table C15 (continued)

U-M SUSTAINABILITY INITIATIVES - AWARENESS & RATINGS

(percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
	<i>How would you rate UM's efforts to:***</i>								
Protect the Huron River									
(5) Very good (A)	13	16	13	11	10	12	14	13	10
(4) Good (B)	37	36	35	42	41	38	36	38	38
(3) Fair (C)	40	40	39	37	40	39	41	42	44
(2) Poor (D)	8	7	10	9	8	9	8	6	7
(1) Very poor (F)	2	1	3	1	1	2	1	1	1
Total	100	100	100	100	100	100	100	100	100
Mean Rating	3.51	3.59	3.45	3.53	3.51	3.49	3.54	3.56	3.49
Promote Composting									
(5) Very good (A)	13	20	12	11	7	13	13	11	6
(4) Good (B)	29	37	32	27	26	31	26	31	31
(3) Fair (C)	36	30	34	36	39	34	39	42	45
(2) Poor (D)	18	11	18	22	24	18	18	14	16
(1) Very poor (F)	4	2	4	4	4	4	4	2	2
Total	100	100	100	100	100	100	100	100	100
Mean Rating	3.29	3.62	3.3	3.19	3.08	3.31	3.26	3.35	3.23

** 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	1765	805	240	243	204	1504	257	546	641
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Appendix Table C16

OTHER BEHAVIORS & OPINIONS ABOUT SUSTAINABILITY

(percentage distribution)*

2015	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	20	22	20	18	22	21	20	41	41
Rarely	16	16	16	16	14	15	16	16	19
Sometimes	33	32	32	33	33	33	34	28	26
Frequently	27	26	29	30	24	27	27	11	11
Don't know	4	4	3	3	7	4	3	4	3
Total	100	100	100	100	100	100	100	100	100
Buy locally sourced or sustainable food									
Never	32	32	35	30	36	33	30	28	35
Rarely	22	21	18	23	22	21	23	18	20
Sometimes	27	29	30	30	21	27	28	32	27
Frequently	14	12	13	13	14	13	15	18	16
Don't know	5	6	4	4	7	6	4	4	2
Total	100	100	100	100	100	100	100	100	100
Conserve water									
Never	17	18	13	12	19	16	20	28	32
Rarely	17	13	15	19	15	15	19	15	15
Sometimes	35	37	37	34	36	36	33	31	25
Frequently	28	30	33	33	26	30	26	23	26
Don't know	3	2	2	2	4	3	2	3	2
Total	100	100	100	100	100	100	100	100	100
Conserve electricity									
Never	13	15	11	10	12	12	14	24	39
Rarely	13	13	14	9	11	12	14	12	20
Sometimes	35	36	31	34	31	33	39	31	25
Frequently	37	34	42	45	42	41	31	30	13
Don't know	2	2	2	2	4	2	2	3	3
Total	100	100	100	100	100	100	100	100	100
Reuse or recycle containers or bags									
Never	16	16	14	11	19	15	17	22	32
Rarely	14	14	9	14	14	13	15	12	15
Sometimes	29	26	30	29	28	28	31	29	25
Frequently	39	42	45	44	35	41	35	34	26
Don't know	2	2	2	2	4	3	2	3	2
Total	100	100	100	100	100	100	100	100	100

Appendix Table C16 (continued)

OTHER BEHAVIORS & OPINIONS ABOUT SUSTAINABILITY

(percentage distribution)*

2015	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>									
Buy fewer things									
Never	25	23	22	21	31	25	27	32	39
Rarely	24	25	22	26	20	23	24	19	20
Sometimes	30	32	32	33	28	31	28	28	25
Frequently	18	17	21	17	15	17	19	18	13
Don't know	3	3	3	3	6	4	2	3	3
Total	100	100	100	100	100	100	100	100	100
Buy things that are better for the environment									
Never	26	24	22	21	31	25	29	29	36
Rarely	23	23	25	25	23	24	22	18	19
Sometimes	32	34	34	36	27	32	31	32	28
Frequently	15	15	15	15	13	15	16	17	14
Don't know	4	4	4	3	6	4	2	4	3
Total	100	100	100	100	100	100	100	100	100
Use environmentally-friendly ways of controlling insects, weeds, and pests									
Never	46	40	48	41	54	46	47	38	45
Rarely	19	22	17	21	16	18	20	17	19
Sometimes	15	17	16	16	11	15	15	25	19
Frequently	10	11	11	10	7	10	10	15	12
Don't know	10	10	8	12	12	11	8	5	5
Total	100	100	100	100	100	100	100	100	100
Do something in order to reduce his/her greenhouse gas emissions									
Never	36	32	35	31	41	35	37	44	45
Rarely	21	22	18	23	18	20	22	20	22
Sometimes	24	27	27	27	19	25	23	19	22
Frequently	13	14	16	12	11	13	14	10	7
Don't know	6	5	4	7	11	7	4	7	4
Total	100	100	100	100	100	100	100	100	100

Appendix Table C16 (continued)

OTHER BEHAVIORS & OPINIONS ABOUT SUSTAINABILITY

(percentage distribution)*

2015	All	Undergraduate Students					Graduate	Staff	Faculty
	Students	Fresh	Soph	Junior	Senior	All	Students		
<i>Would you support or oppose the following governmental policies?</i>									
A 20 cent increase in the price per gallon of gasoline, if the extra money were used to improve local public transportation									
Strongly support	11	11	12	12	13	12	32	15	40
Moderately support	16	21	16	18	22	20	30	24	29
Neither support nor oppose	21	21	24	21	22	22	19	22	14
Moderately oppose	30	32	33	29	27	30	10	17	9
Strongly oppose	22	15	15	20	16	16	9	22	8
Total	100	100	100	100	100	100	100	100	100
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									
Strongly support	30	29	27	28	25	27	35	24	44
Moderately support	32	35	35	32	33	34	29	34	31
Neither support nor oppose	19	18	20	17	19	18	19	20	12
Moderately oppose	12	12	12	15	13	13	11	10	7
Strongly oppose	7	6	6	8	10	8	6	12	6
Total	100	100	100	100	100	100	100	100	100
A ban on disposable plastic bags									
Strongly support	34	26	35	34	31	32	38	30	39
Moderately support	29	31	28	29	29	29	30	29	29
Neither support nor oppose	19	23	22	20	18	20	17	24	18
Moderately oppose	11	14	10	11	14	13	8	11	9
Strongly oppose	7	6	5	6	8	6	7	6	5
Total	100	100	100	100	100	100	100	100	100
A tax on fuels - like gasoline and natural gas - according to their carbon content, if the extra money were used for clean energy projects									
Strongly support	29	23	25	28	24	25	36	17	43
Moderately support	31	32	32	29	31	31	31	29	30
Neither support nor oppose	22	23	25	20	25	23	20	26	16
Moderately oppose	11	14	13	14	11	13	7	14	5
Strongly oppose	7	8	5	9	9	8	6	14	6
Total	100	100	100	100	100	100	100	100	100

Appendix Table C16 (continued)

OTHER BEHAVIORS & OPINIONS ABOUT SUSTAINABILITY

(percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
<u>How much would you be willing to pay personally each year to...</u>									
Expand waste prevention efforts, such as recycling and green purchasing at U-M									
\$0	23	23	23	26	26	25	21	40	22
\$1-\$10	34	35	31	33	34	33	35	31	19
\$11-\$20	20	22	24	18	20	21	19	13	15
\$21-\$30	10	9	10	11	10	10	8	7	11
\$31-\$40	3	3	4	1	4	3	3	1	5
\$41-\$50	10	8	8	11	6	8	14	8	28
Total	100	100	100	100	100	100	100	100	100
Number of respondents									
Expand alternative transportation efforts such as buses, bikes, and carpools at U-M									
\$0	25	25	29	29	31	29	19	45	24
\$1-\$10	30	31	31	30	29	30	31	25	16
\$11-\$20	18	21	18	15	15	17	19	11	14
\$21-\$30	12	11	10	12	13	12	11	8	12
\$31-\$40	4	4	3	4	5	4	3	2	5
\$41-\$50	11	8	9	10	7	8	17	9	29
Total	100	100	100	100	100	100	100	100	100
Expand efforts to lower greenhouse gas emissions at U-M through energy conservation and renewable sources									
\$0	24	23	23	25	30	26	21	41	22
\$1-\$10	31	32	31	30	28	30	32	29	17
\$11-\$20	19	19	21	19	18	19	19	13	15
\$21-\$30	10	11	10	10	12	11	9	6	13
\$31-\$40	4	5	4	5	3	4	4	2	6
\$41-\$50	12	10	11	11	9	10	15	9	27
Total	100	100	100	100	100	100	100	100	100

Appendix Table C16 (continued)
OTHER BEHAVIORS & OPINIONS ABOUT SUSTAINABILITY
 (percentage distribution)*

2015	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>									
<hr/>									
Being able to walk, bike, or take the bus places from where you live									
Very likely	63	55	65	59	54	58	73		
Somewhat likely	27	34	22	32	34	31	20		
Not very likely	8	10	11	7	9	9	5		
Not at all likely	2	1	2	2	3	2	2		
Total	100	100	100	100	100	100	100		
Buying sustainable food									
Very likely	37	34	36	35	29	33	45		
Somewhat likely	40	42	39	44	38	41	37		
Not very likely	18	21	19	16	25	20	14		
Not at all likely	5	3	6	5	8	6	4		
Total	100	100	100	100	100	100	100		
Being able to easily compost household and food leftovers									
Very likely	30	25	28	27	22	25	37		
Somewhat likely	31	33	31	31	28	31	31		
Not very likely	28	32	29	29	35	31	23		
Not at all likely	11	10	12	13	15	13	9		
Total	100	100	100	100	100	100	100		
Conserving natural resources by reducing waste, reducing things, and recycling									
Very likely	52	46	51	49	44	47	60		
Somewhat likely	37	42	36	41	39	40	33		
Not very likely	8	10	9	7	12	10	5		
Not at all likely	3	2	4	3	5	3	2		
Total	100	100	100	100	100	100	100		
Take care of your home and property in environmentally-friendly ways									
Very likely	48	43	50	50	39	45	53		
Somewhat likely	40	47	38	38	45	42	38		
Not very likely	9	8	9	9	11	10	7		
Not at all likely	3	2	3	3	5	3	2		
Total	100	100	100	100	100	100	100		
Reducing your greenhouse gas emissions as much as possible									
Very likely	40	35	40	37	32	36	47		
Somewhat likely	40	44	38	43	43	42	37		
Not very likely	15	17	16	16	19	17	12		
Not at all likely	5	4	6	4	6	5	4		
Total	100	100	100	100	100	100	100		

Appendix Table C16 (continued)

OTHER BEHAVIORS & OPINIONS ABOUT SUSTAINABILITY

2015	All Students	(percentage distribution)*					Graduate Students	Staff	Faculty
		Undergraduate Students							
		Fresh	Soph	Junior	Senior	All			
<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	26	26	23	27	21	24	29	16	31
Somewhat concerned	53	52	56	53	51	53	55	54	52
Not that concerned	17	18	16	15	24	19	13	24	14
Not at all concerned	4	4	5	5	4	4	3	6	3
Total	100	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	29	23	24	31	25	26	34	32	42
Somewhat concerned	48	51	49	49	44	48	47	51	48
Not that concerned	19	23	21	15	25	21	16	14	9
Not at all concerned	4	3	6	5	6	5	3	3	1
Total	100	100	100	100	100	100	100	100	100
Natural resources - like water and fossil fuels - being used up									
Very concerned	46	50	46	47	41	46	47	39	48
Somewhat concerned	41	38	40	40	43	40	42	45	40
Not that concerned	10	10	9	9	11	10	9	12	10
Not at all concerned	3	2	5	4	5	4	2	4	2
Total	100	100	100	100	100	100	100	100	100
People producing too much waste									
Very concerned	46	43	45	48	43	44	50	43	50
Somewhat concerned	42	44	44	40	40	42	42	45	41
Not that concerned	10	11	8	9	14	11	7	10	7
Not at all concerned	2	2	3	3	3	3	1	2	2
Total	100	100	100	100	100	100	100	100	100
The loss of open space									
Very concerned	42	44	43	42	37	41	50	43	48
Somewhat concerned	40	39	40	42	41	41	53	39	40
Not that concerned	14	15	12	12	17	14	7	15	11
Not at all concerned	4	2	5	4	5	4	1	3	1
Total	100	100	100	100	100	100	111	100	100

Appendix Table C16 (continued)

OTHER BEHAVIORS & OPINIONS ABOUT SUSTAINABILITY

(percentage distribution)*

2015	All Students	Undergraduate Students					Graduate Students	Staff	Faculty
		Fresh	Soph	Junior	Senior	All			
<i>How concerned are you about the following things?</i>									
The loss of wildlife habitat									
Very concerned	55	58	59	52	49	54	57	51	54
Somewhat concerned	36	34	30	38	37	35	36	39	38
Not that concerned	7	7	8	7	11	8	5	8	7
Not at all concerned	2	1	3	3	3	3	2	2	1
Total	100	100	100	100	100	100	100	100	100
Population growth									
Very concerned	39	42	37	40	36	39	38	31	37
Somewhat concerned	41	38	43	40	38	39	43	43	38
Not that concerned	16	17	15	15	20	17	15	21	20
Not at all concerned	4	3	5	5	6	5	4	5	5
Total	100	100	100	100	100	100	100	100	100
<i>Overall, how committed are you to sustainability?</i>									
Very committed	19	18	15	17	16	16	24	13	28
Somewhat committed	58	57	60	58	53	57	59	66	60
Not very committed	21	23	23	22	27	24	16	19	11
Not at all committed	2	2	2	3	4	3	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	19	12	14	17	22	16	23	11	11
Parents or other family members	17	24	20	15	15	18	16	18	10
K-12 teachers	8	18	9	8	5	10	4	2	1
U-M professors/instructors	12	5	18	15	18	14	7	1	2
Childhood experience outdoors	7	8	10	8	5	8	8	12	10
Media--readings, video, movies, TV	29	30	26	30	26	28	31	45	54
Other UM activities	1	0	1	1	2	1	**	1	1
Other	7	3	2	6	7	5	11	10	11
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	2456	1067	328	341	297	2033	423	834	1115
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Appendix D: Constructing Indicators

During the initial year of SCIP (2012) indicators or indices were created that combined responses to closely related questions about a common idea, concept, or action. In many instances, responses were statistically correlated. Weakly correlated responses that reflect different dimensions of the same idea, concept, or action were nevertheless combined to create a desired indicator.⁶⁷ Items used to create indices are shown in Table D1. 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.⁶⁸ 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

⁶⁷ Exploratory factor analysis with a Cronbach Alpha was employed to assess associations and the internal consistency in a set of responses. The alphas for the indices used in the 2012 SCIP survey vary from .32 to .94. The alphas are shown in Table D1 in the 2012 SCIP report.

⁶⁸ 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.

determine the distributions and the mean scores of indicators.⁶⁹

⁶⁹ SPSS Complex Samples gives more accurate statistical estimates than Base SPSS.

Appendix Table D1

SUSTAINABILITY CULTURAL INDICATORS CONSTRUCTION

(names of and number of items)

Name of Index	Students		Staff/Faculty	
	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	4	turn off lights, use computer power-saver, turn off computer, use motion sensor (at work)	4
Travel Behavior	Most often mode of travel to campus since fall sem	1	Most often mode of travel to work	1
<i>Waste Prevention</i>				
Waste Prevention Behavior	print dble-sided, recycle paper, etc., use reusable cups, etc., use property disposition	4	print dble-sided, recycle paper, etc., use reusable cups, etc., use property disposition	4
<i>Healthy Environments</i>				
Sustainable Food Purchases	Buy sustainable food, organic, locally-grown	3	Buy sustainable food, organic, locally-grown	3
Protecting the Natural Environment	use fertilizer, herbicides, water lawn	3	use fertilizer, herbicides, water lawn	3
<i>Community Awareness</i>				
Sustainable Travel & Transportation	AAATA, UM buses, biking, Zipcar rental	4	AAATA, UM buses, biking, Zipcar rental	4
Waste Prevention	recycle glass, plastic, paper, electrical waste, property disposition	5	recycle glass, plastic, paper, electrical waste, property disposition	5
Natural Environment Protection	dispose hazardous waste, recognize invasive species, residential property, protect Huron River	4	dispose hazardous waste, recognize invasive species, residential property, protect Huron River	4
Sustainable Foods	locally grown, organic, fair trade, humanely-treated, hormones-free, grassfed, sustainable fish	7	locally grown, organic, fair trade, humanely-treated, hormones-free, grassfed, sustainable fish	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	8	save energy, encourage bus or bike, promote ride sharing, recycling, sust food, reduce greenhouse gas, maintain grounds, protect Huron River	8
SECONDARY				
Sustainability Engagement at U-M	partic in sustain. org., Earthfest, sustain class	3	partic in org., Earthfest	2
Sustainability Engagement Generally	give money, voting, volunteering, serving as officer	4	give money, voting, volunteering, serving as officer	4
Sustainability Commitment	how committed to sustainability	1	how committed to sustainability	1
Sustainability Disposition	willingness to pay items	3	willingness to pay items	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	8	save energy, encourage bus or bike, promote ride sharing, recycling, sust food, reduce greenhouse gas, maintain grounds, protect Huron River	8

Appendix E. Supplemental Tables - 2014

The following tables present detailed information covering 2012-2015 indicator scores for students, staff, and faculty, 2015 sub-region differences in indicator scores for the larger operational regions of the Ann Arbor campus, BTU & CO₂ data for residence halls and Northwood apartments, and student panel sustainability indices for 2012-2015.

Appendix Table E1

***CHANGE IN SUSTAINABILITY CULTURAL INDICATORS
for STUDENTS, STAFF AND FACULTY - 2012, 2013, 2014, 2015***

(mean scores)

INDICES	Students				Staff				Faculty			
	2012	2013	2014	2015	2012	2013	2014	2015	2012	2013	2014	2015
PRIMARY												
<i>Climate Action</i>												
Conservation Behavior	6.1	6.2	6.1	6.1	6.6	6.7	6.5	6.5	6.9	6.9	7.0	7.0
Travel Behavior	7.6	7.5	7.4	7.6	1.6	1.4	1.6	1.5	2.2	2.0	1.8	2.3
<i>Waste Prevention</i>												
Waste Prevention Behavior	6.6	6.6	6.7	6.9	7.0	7.0	7.0	7.1	7.3	7.3	7.4	7.6
<i>Healthy Environments</i>												
Sustainable Food Purchases	5.5	5.3	5.6	5.5	5.7	5.8	5.8	5.9	6.3	6.2	6.3	6.4
Protecting the Natural Environment	8.6	8.9	8.8	8.8	6.5	6.4	6.6	6.7	6.1	6.1	6.4	6.6
<i>Community Awareness</i>												
Sustainable Travel & Transportation	4.4	4.3	4.2	4.1	3.0	3.0	3.1	3.1	3.4	3.3	3.3	3.5
Waste Prevention	4.0	4.2	4.2	4.1	5.0	5.1	5.0	4.9	5.1	5.4	5.5	5.3
Natural Environment Protection	3.1	3.3	3.4	3.4	4.1	4.3	4.3	4.2	4.3	4.6	4.6	4.5
Sustainable Foods	4.3	4.5	4.8	4.7	4.7	5.1	5.0	5.2	5.6	5.7	5.7	6.0
U-M Sustainability Initiatives	5.1	5.1	5.0	5.1	5.4	5.6	5.3	5.3	4.9	5.1	5.0	5.1
SECONDARY												
Sustainability Engagement at U-M	1.3	1.4	1.6	1.9	0.9	0.7	0.7	1.1	0.7	0.7	0.7	1.2
Sustainability Engagement Generally	1.9	1.8	2.0	2.0	1.9	1.9	1.8	1.8	3.0	2.9	3.0	2.7
Sustainability Commitment	6.3	6.3	6.3	6.5	6.3	6.4	6.4	6.4	7.0	7.2	7.1	7.2
Sustainability Disposition	3.5	3.3	3.4	3.4	2.9	2.6	2.5	2.5	5.3	4.7	4.9	4.8
Rating U-M Sustainability Initiatives	6.6	6.4	6.5	6.7	6.7	6.8	6.6	6.7	6.4	6.5	6.4	6.5

↑ significant change from 2012 (p<.001)

↑ significant change from 2012 (p<.01)

↑ significant change from 2012 (p<.05)

▲ significant change from previous year (p<.001)

▲ significant change from previous year (p<.01)

▲ significant change from previous year (p<.05)

Appendix Table E2

SUMMARY SUSTAINABILITY CULTURAL INDICATORS
for STAFF/FACULTY, by CAMPUS SUB-REGIONS

(mean scores)

2015		Central Campus West		Central Campus East		Health Sciences		North Campus	
		North	South	North	South	North	South	North	South
PRIMARY									
<i>Climate Action</i>									
Conservation Behavior		7.1	7.5	7.2	6.8	6.5	7.0	6.9	6.6
Number of respondents		217	153	147	116	194	124	219	67
Travel Behavior		3.5	2.4	2.4***	5.0***	2.0	2.7	1.7	2.3
Number of respondents		219	153	150	119	198	124	226	67
<i>Waste Prevention</i>									
Waste Prevention Behavior		7.5	7.5	7.6	7.5	7.2	7.4	7.6	7.9
Number of respondents		219	154	150	119	197	124	226	67
<i>Healthy Environments</i>									
Sustainable Food Purchases		6.2	6.4	6.5	6.2	5.8	5.6	5.9	6.3
Number of respondents		216	152	145	115	193	122	222	63
Protecting the Natural Environment		8.0	7.2	7.0**	8.2**	7.0	7.1	6.3***	8.3***
Number of respondents		173	122	120	95	171	103	185	51
<i>Community Awareness</i>									
Sustainable Travel & Transportation		3.8	3.6	3.7	3.8	3.7	3.9	3.5	3.7
Number of respondents		218	154	148	119	198	124	225	67
Waste Prevention		5.5	5.6	5.5	5.1	5.0	5.7	5.4	4.7
Number of respondents		219	154	150	119	198	124	226	67
Natural Environment Protection		4.0	4.3	4.0	4.2	4.6	4.6	4.2	4.4
Number of respondents		219	154	150	119	198	124	225	67
Sustainable Foods		5.9	6.2	5.5	6.0	5.6	5.2	5.2	5.2
Number of respondents		219	154	150	119	198	124	226	67
U-M Sustainability Initiatives		4.9*	5.9*	5.3	5.2	5.4	5.3	5.3	4.9
Number of respondents		218	153	148	119	195	123	223	67
SECONDARY									
Sustainability Engagement at U-M		1.3	2.4*	1.9	1.8	1.3	1.6	0.7	1.2
Number of respondents		208	152	145	118	191	122	221	67
Sustainability Engagement Generally		2.4*	3.4*	2.4	2.3	1.9	2.0	2.1	2.3
Number of respondents		219	154	149	119	197	123	223	67
Sustainability Commitment		6.9	7.3	6.8	7.1	6.9	7.0	6.5	6.8
Number of respondents		219	154	149	119	197	124	226	67
Sustainability Disposition		3.4	4.1	2.9	3.9	3.2	3.6	3.3	3.3
Number of respondents		214	149	147	114	192	123	223	66
Rating U-M Sustainability Initiatives		6.6	6.8	6.6	6.8	6.5	6.8	6.7	6.5
Number of respondents		145	105	108	75	154	98	176	51

*significant difference between sub-regions (p<.05)

**significant difference between sub-regions (p<.01)

***significant difference between sub-regions (p<.001)

Appendix Table E3

***CHANGE IN SUSTAINABILITY CULTURAL INDICATORS
for STAFF/FACULTY, by CAMPUS AND REGION - 2012 & 2015***
(mean scores)

INDICES	Central Campus West		Central Campus East		North Campus		Medical Campus		Health Sciences		South Campus		East Campus	
	2012	2015	2012	2015	2012	2015	2012	2015	2012	2015	2012	2015	2012	2015
	PRIMARY													
<i>Climate Action</i>														
Conservation Behavior	7.1	7.3	7.1	7.0	7.1	6.9	5.9	5.9	6.7	6.7	7.6	7.0	6.8	6.4
Number of respondents	157	370	220	263	277	286	494	371	320	318	78	65	83	80
Travel Behavior	3.1	3.1	3.6	3.5	1.9	1.8	1.0	1.1	2.8	2.2	0.7	0.6	0.4	0.2
Number of respondents	364	372	223	269	285	293	525	396	323	322	79	66	85	82
<i>Waste Prevention</i>														
Waste Prevention Behavior	7.2	7.5	7.3	7.5	7.2	7.6	6.5	6.7	7.2	7.3	7.6	7.5	7.2	7.6
Number of respondents	363	373	223	269	285	293	524	396	323	321	79	66	85	82
<i>Healthy Environments</i>														
Sustainable Food Purchases	6.0	6.3	5.8	6.4	5.9	6.0	5.5	6.0	5.8	5.8	5.9	5.9	5.5	5.7
Number of respondents	352	368	219	260	274	285	503	384	316	315	75	63	83	82
Protecting the Natural Environment	6.4	7.7	7.1	7.5	6.8	6.6	6.1	6.6	6.4	7.0	6.3	6.2	6.4	5.7
Number of respondents	289	295	171	215	222	236	456	343	278	274	70	58	75	71
<i>Community Awareness</i>														
Sustainable Travel & Transportation	3.7	3.7	4.0	3.7	3.7	3.5	2.6	3.0	3.6	3.8	3.6	3.2	2.9	3.0
Number of respondents	363	372	223	267	284	292	521	395	322	322	79	66	85	82
Waste Prevention	5.2	5.6	5.5	5.3	5.2	5.3	4.4	4.3	5.0	5.2	6.4	5.7	5.6	5.5
Number of respondents	364	373	223	269	285	293	525	395	323	322	79	66	85	82
Natural Environment Protection	3.8	4.2	4.1	4.1	4.1	4.2	3.9	4.2	4.2	4.6	4.9	4.3	4.3	4.9
Number of respondents	364	373	223	269	285	292	525	395	323	322	79	66	85	82
Sustainable Foods	5.2	6.0	5.5	5.7	5.0	5.2	4.7	5.2	4.9	5.5	5.0	5.0	4.9	5.1
Number of respondents	364	373	223	269	285	293	525	396	323	322	79	66	85	82
U-M Sustainability Initiatives	5.3	5.3	5.3	5.2	5.3	5.3	5.1	5.0	5.5	5.4	6.2	5.9	5.8	5.2
Number of respondents	363	371	222	267	284	290	522	396	323	318	79	64	84	82
SECONDARY														
	2012	2015	2012	2015	2012	2015	2012	2015	2012	2015	2012	2015	2012	2015
Sustainability Engagement at U-M	1.1	1.7	1.3	1.8	0.8	0.8	0.3	0.8	1.0	1.5	2.5	1.9	0.8	0.7
Number of respondents	352	360	218	263	278	288	518	389	317	313	78	64	85	79
Sustainability Engagement Generally	2.5	2.8	2.5	2.3	2.3	2.1	1.7	1.8	2.4	2.0	2.3	1.6	1.8	1.9
Number of respondents	363	373	222	268	285	290	525	396	321	320	79	66	84	81
Sustainability Commitment	6.8	7.1	6.8	7.0	6.5	6.5	6.1	6.2	6.7	6.9	6.8	6.6	6.5	6.0
Number of respondents	363	373	222	268	282	293	522	394	320	321	79	65	85	82
Sustainability Disposition	3.8	3.7	3.9	3.4	3.8	3.3	2.8	2.4	3.7	3.3	3.6	2.7	3.2	2.7
Number of respondents	357	363	216	261	278	289	515	391	320	315	79	64	83	79
Rating U-M Sustainability Initiatives	6.4	6.7	6.9	6.7	6.6	6.7	6.6	6.7	6.9	6.6	6.7	7.2	7.0	6.7
Number of respondents	243	250	153	183	207	227	388	289	245	252	69	53	65	64

Appendix Table E4

CHANGE IN ENERGY USE, CO2 EMISSIONS, & CONSERVATION BEHAVIOR
AMONG STUDENTS IN U-M HOUSING, by PLACE OF RESIDENCE: 2012-2015

U-M Housing ^a	BTU Per Square Foot					Metric Tons CO2 Per Square Feet					Change in Conservation Behavior 2012-2015	
	2012	2013	2014	2015	Change(%) 2012-2015	2012	2013	2014	2015	Change(%) 2012-2015		
North Quad	71,363	72,495	72,286	71,627	0%	0.0081	0.0080	0.0079	0.0078	-3%		-6.4%
West Quad*	69,043	77,810	77,942	42,655	-38%	0.0065	0.0072	0.0072	0.0037	-43%		-3.6%
South Quad*	64,238	75,407	58,879	119,407	86%	0.0064	0.0073	0.0046	0.0116	81%		-0.3%
East Quad*	71,078	33,561	91,869	91,912	29%	0.0065	0.0028	0.0094	0.0094	43%		**
Stockwell	69,559	76,168	85,011	81,251	17%	0.0071	0.0075	0.0081	0.0078	10%		0.0%
Mosher-Jordan	170,445	202,095	212,627	196,815	15%	0.0182	0.0208	0.0213	0.0199	10%		-2.9%
Mary Markley	99,301	110,623	120,527	119,250	20%	0.0093	0.0100	0.0108	0.0106	15%		2.0%
Alice Lloyd***	22,884	33,376	34,063	34,069	2%	0.0016	0.0049	0.0052	0.0052	4%		-3.4%
Couzens	83,101	96,892	98,875	97,510	17%	0.0085	0.0089	0.0091	0.0089	5%		-4.5%
Bursley-Baits	114,805	118,627	120,397	116,208	1%	0.0098	0.0098	0.0098	0.0096	-2%		-2.9%
Northwood Apartments	82,021	82,962	89,469	86,078	5%	0.0064	0.0064	0.0067	0.0066	3%		3.1%

^aData are excluded for the smaller residence halls having relatively small numbers of respondents. These include: Bestsy Barbour, Martha Cook, Fletcher, Henderson, Newberry, and Oxford.

^bData on energy use on CO2 emissions reflect the previous fiscal year. For example the 2012 data cover FY12 (July 2011 to June 2012).

*In 2005, U-M launched a long-term program of selective upgrades and complete renovations to its housing stock. In 2012, East Quad was closed for renovations followed by the closure of South Quad in 2013 and the West Quad closure in 2014. Figures for energy consumption and carbon emissions during renovation do not reflect normal occupancy use.

**During renovations, residence halls were unoccupied. Therefore, there were no East Quad students in the 2012 SCIP sample while the 2014 SCIP sample had no West Quad participants. Consequently, survey data covering both 2012 and 2014 were not available to measure change scores for students in these residence halls.

*** 2012 data covering energy use and CO2 emissions for Alice Lloyd are low since the building was being renovated and therefore unoccupied during the previous year. Change for this residence hall is based on the difference between 2014 and 2013.

Appendix Table E5

STUDENT PANEL SUSTAINABILITY INDICES-2012-2015

(mean scores)

INDICES	Undergraduate Panel			
	Fr 2012	Senior 2015	Fr 2013	Jr 2015
PRIMARY				
<i>Climate Action</i>				
Conservation Behavior	6.2	5.9 ↓	6.2	6.0
Travel Behavior	7.9	8.1	7.7	8.4 ↑
<i>Waste Prevention</i>				
Waste Prevention Behavior	6.4	7.1 ↑	6.0	6.8 ↑
<i>Health Environments</i>				
Sustainable Food Purchases^a	5.3	5.1	6.0	5.2
Protecting the Natural Environment^a	8.3	9.6	6.7	9.5
<i>Community Awareness</i>				
Sustainable Travel and Transportation	4.1	4.7 ↑	3.6	4.6 ↑
Waste Prevention	4.0	4.4 ↑	3.8	4.1
Natural Environment Protection	3.3	2.8 ↓	3.3	2.9 ↓
Sustainable Foods	4.1	4.9 ↑	4.1	4.5 ↑
U-M Sustainability Initiatives	6.0	5.8	5.7	5.8
SECONDARY				
Sustainability Engagement at U-M	1.2	3.9 ↑	1.2	3.0 ↑
Sustainability Engagement Generally	2.5	2.3	1.5	1.9 ↑
Sustainability Commitment	6.5	6.7	6.0	6.4 ↑
Sustainability Disposition	3.6	3.0 ↓	3.5	2.9 ↓
Rating U-M Sustainability Initiatives	7.1	6.7 ↓	6.7	6.7
number of respondents ^a	298		257	

^a Most U-M freshmen live in residence halls and therefore were not asked questions about purchasing sustainable foods and protecting the natural environment. Consequently, only 39 of the 2012 freshmen selected to participate in the panel answered questions about sustainable food purchases and just 21 answered questions about natural environment protection. Similarly, only 17 and 5 freshmen in 2013 answered these questions respectively.

↑ significant change from freshman year ($p < .001$)

↑ significant change from freshman year ($p < .01$)

↑ significant change from freshman year ($p < .05$)

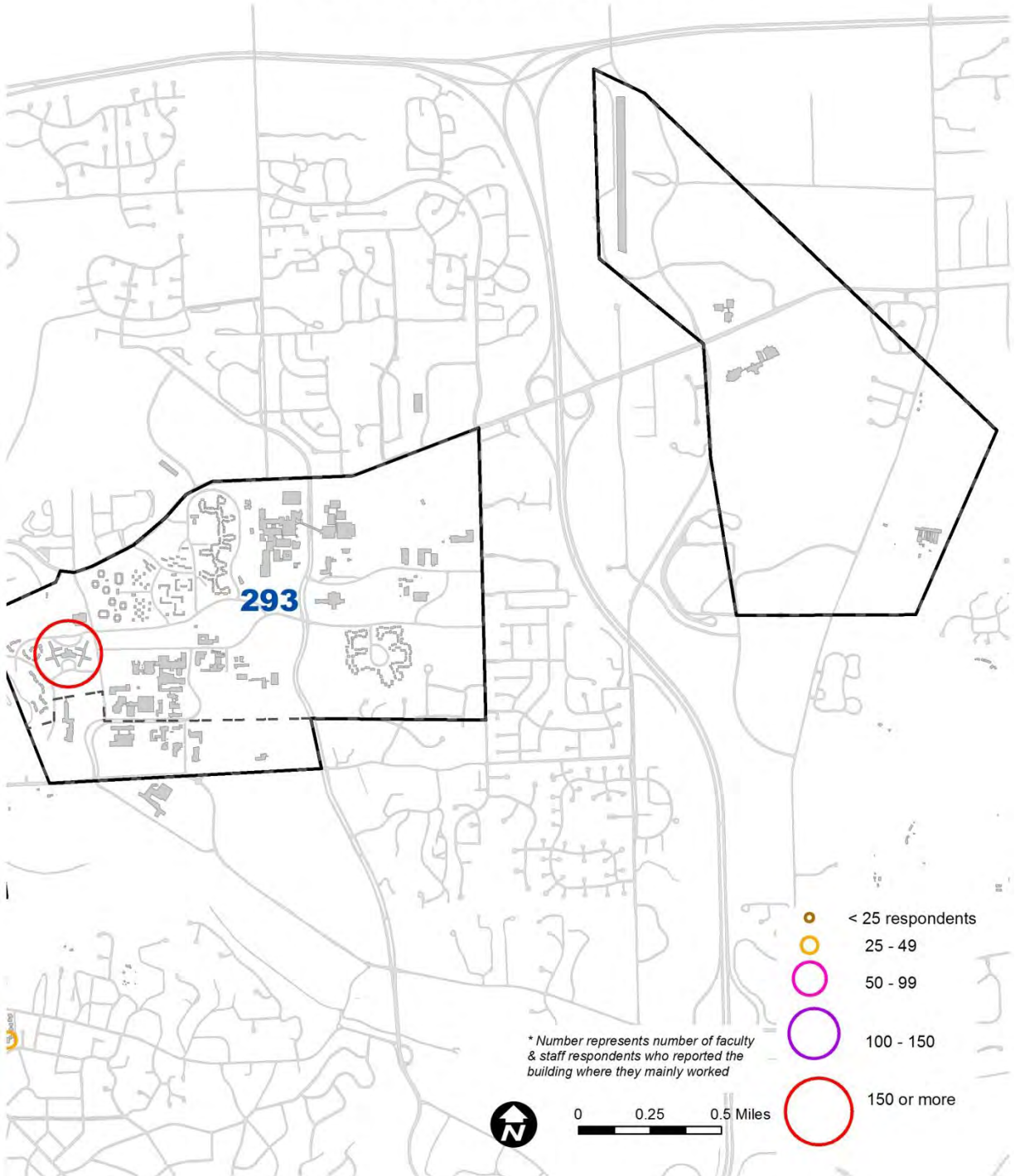
Appendix F. Supplemental Maps - 2014

The following maps show the number and spatial distribution of students, staff, and faculty that responded to the 2014 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.

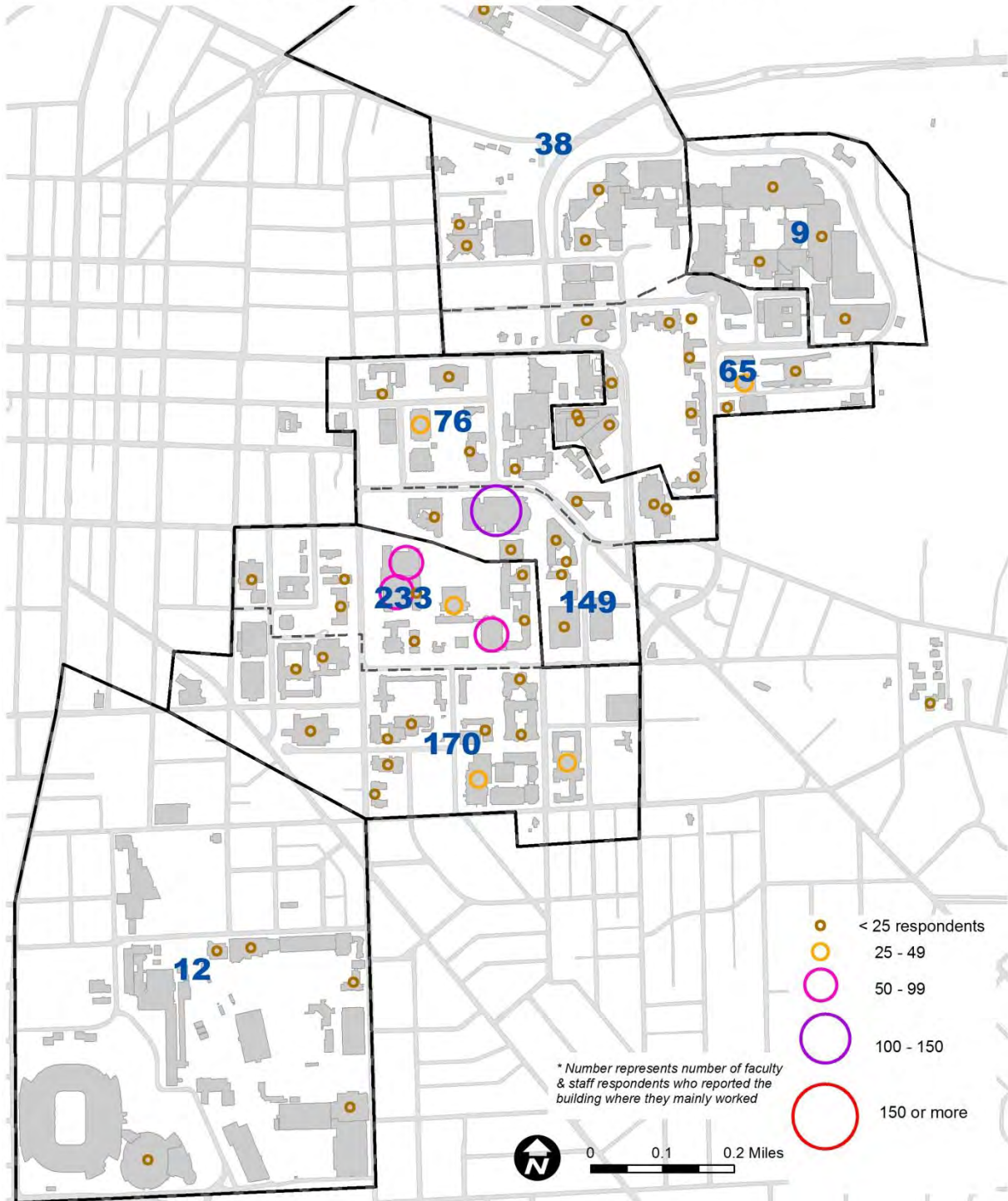
**2015 STUDENT RESPONDENTS -
RESIDENCE HALLS***



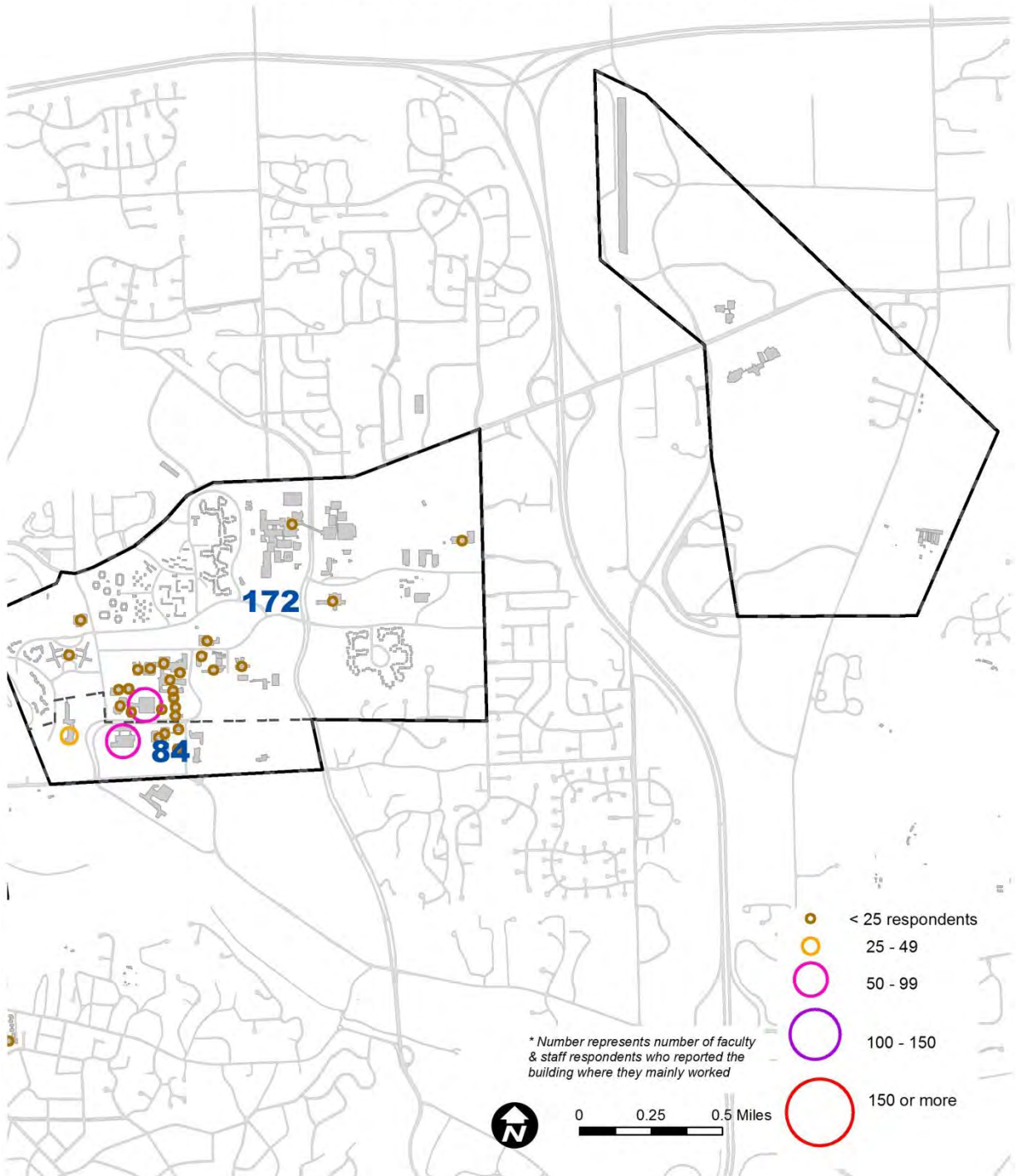
2015 STUDENT RESPONDENTS - RESIDENCE HALLS*



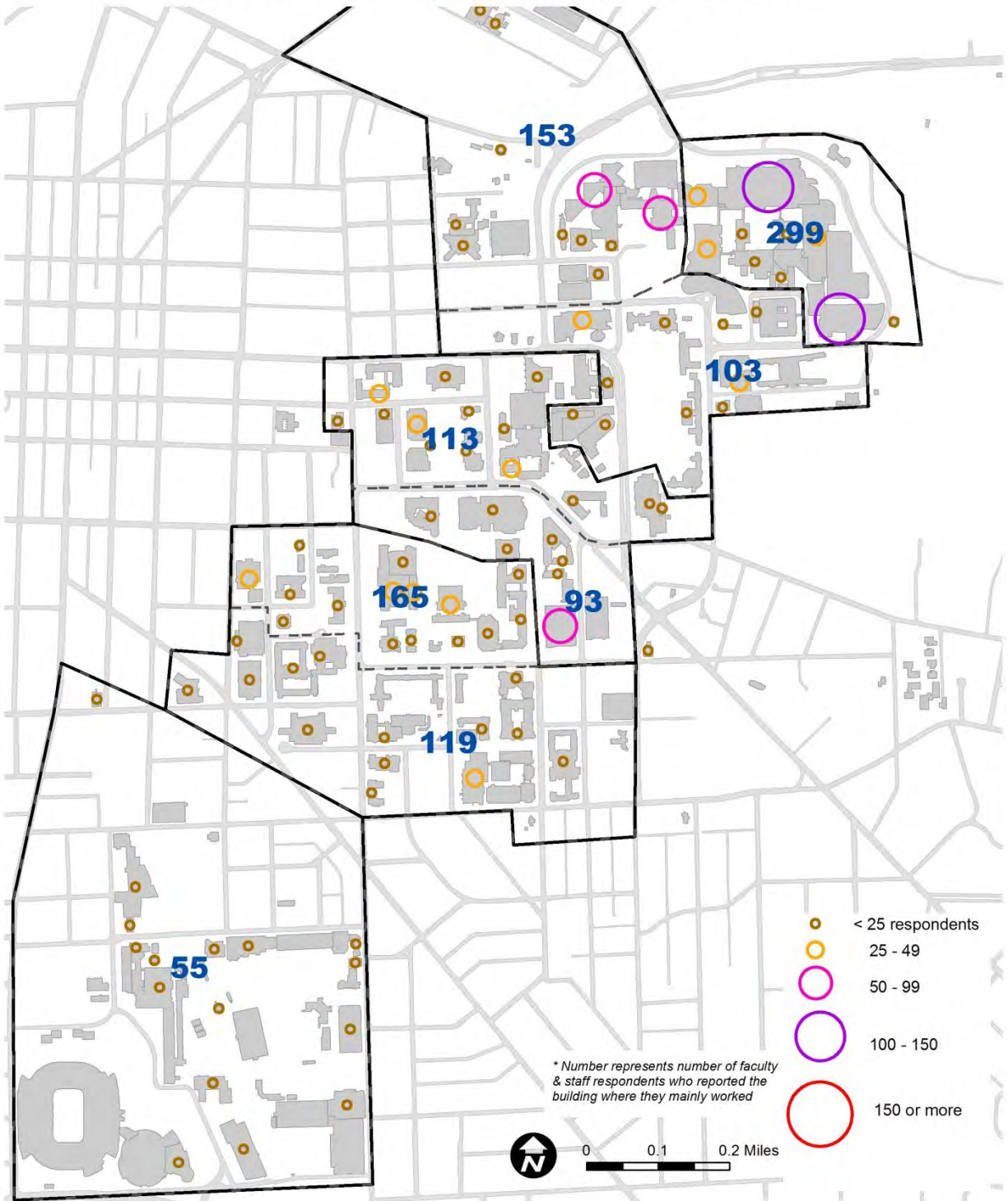
2015 STUDENT RESPONDENTS - ACADEMIC BUILDING USED*



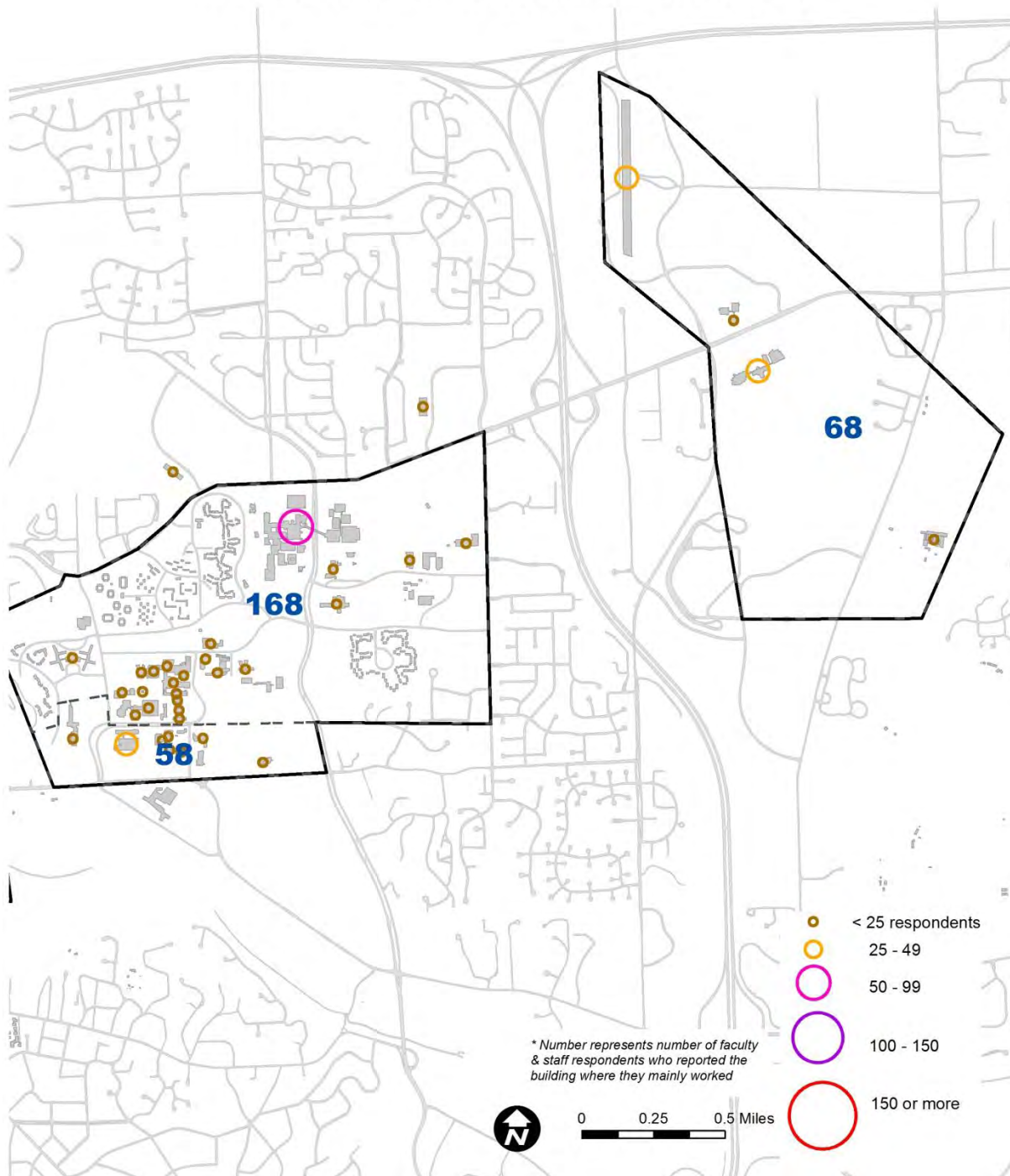
2015 STUDENT RESPONDENTS - ACADEMIC BUILDING USED*



2015 STAFF/FACULTY RESPONDENTS - BUILDING & WORK LOCATION*



2015 STAFF/FACULTY RESPONDENTS - BUILDING & WORK LOCATION*



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