CH2M Hill and Town of Cary
2011 Water Resources and Water Conservation Survey
Executive Summary

The Town of Cary Water Resources and Water Conservation Survey was conducted for CH2M Hill in October and November of 2011. A total of 404 residents were surveyed and the resulting margin of error was ± 5%. The sampling frame was the Town of Cary's utility billing database which also included the Town of Morrisville. A 9-point scale and yes/no response format was used in the survey.

The respondents first were asked their perceptions of three water-related issues. There was a level of agreement that *Cary and Morrisville have sufficient water supplies for the future*. The mean was 6.31 with 53.7% on the agree side of the scale (above the midpoint of 5). However, the fact that 35.1% responded neutral indicated some degree of uncertainty. There was more agreement and less uncertainty that *efficient water use is crucial to the futures of Cary and Morrisville*. The mean was 8.05 with 88.6% on the agree side. There was also a level of agreement that *the amount of water my household uses impacts whether Cary or Morrisville have sufficient water for the future*. The mean was 6.56 (64.1% on the agree side). Again, there was a degree of uncertainty to this issue with 19.0% neutral responses and 16.9% on the disagree side of the scale. The areas of uncertainty in two of the water-related issues represent informational opportunities on water conservation to change those perceptions. The respondents were also asked if they use more, less, or the same amount of water as the average household. An unrealistically high percentage of 42.6% felt they used less, while 40.1% used the same and only 7.9% more than the average household.

The Town's Water Conservation Program received relatively high marks. *Satisfaction with how the Town implements their water conservation program* received a mean of 6.97 with 74.2% on the satisfied side and only 7.2% on the dissatisfied side. The response was even more positive for *satisfaction with how the Town provides water-related information*. The mean was 7.34 with 82.5% on the satisfied side of the scale.

The respondents were asked why they conserve water with five separate reasons examined in the survey. The most important reason was *because it is the right thing to do* with a mean of 8.34 (93.3% on the agree side). This was followed by *to comply with ordinances or abide by the law* (7.84) and *because I want to save money* (7.13). Much less important reasons were *because my children tell me it's important* (4.53) and *because my friends and neighbors do* (4.04). The respondents who indicated it was the right thing to do were subsequently ask why it is the right thing to do. The most important rationale was *to make sure there is enough water in the future* (66.7%) and *to protect the environment* (65.4%). Somewhat less important was *to save energy* (39.5%).

The effectiveness of eight tools to encourage water conservation was explored in the survey. Several of these tools were perceived to be effective. The most effective tool was *regulations like alternative day watering* with a mean of 7.46 and 81.4% on the effective side of the scale. This was followed by *tiered water rates* (6.46), *financial incentives like toilet rebates* (6.41), *the Town's website* (6.20), *talking with a Town staff member* (5.99), and *school programs about water conservation* (5.79). The less effective tools were *water conservation workshops* (4.95) and *talking with a Block Leader* (4.73) with both earning means below the midpoint of 5 on the scale.

In addition to the tools, the respondents were asked about their usage of six potential information sources to help them manage water usage. The results indicated all the information sources were perceived to have some degree of merit. The two sources the respondents were most likely to utilize were *knowing your monthly water use* (7.91) and *being alerted when your water use exceeds a certain point* (7.59). These were followed by *understanding seasonal use compared to average use* (6.56), *knowing how much water is used by specific appliances* (6.21), *understanding your usage compared to what others use* (5.97), and *knowing your daily water usage* (5.64).

The survey also examined several water usage issues. The respondents were asked if *the cost of water is an important factor when deciding how much water to use indoors*. The mean was 5.80 (56.3% on the agree side) indicating it was a factor in deciding indoor usage, but not one of major importance. This was shown by 27.9% on the disagree side and 15.7% neutral responses. However, it was a more important factor for *the cost of water is an important factor when deciding how much water to use outdoors*. The mean for outdoors was 6.90 (73.3% on the agree side). The respondents were next asked if they *take into account the cost of wastewater service when deciding how much water to use*. As with indoor use, this was also a factor but not one of major importance with a mean of 5.50 (46.8% on the agree side). The respondents were neutral and even slightly disagreed with *there should be financial penalties for people who use too much water*. The mean was 4.86 with only 38.5% on the agree side of the scale. More importantly, there were 36.9% on the disagree side and 24.6% were neutral to financial penalties. The respondents were also asked how they maintain their landscaping or garden. There were 59.3% who do the work themselves, 13.6% hire an outside firm or person, 21.6% use a combination of both, and 5.5% indicated their landscaping needs no maintenance. Finally, a question examined if the respondents used any outside sources of water besides water purchased from the Town's water utility. There were 15.0% who used outside water sources. Most of these used rain barrel/cistern (70.0%). Other sources used to a lesser extent were directing roof/rainwater toward plants (16.7%), graywater from indoor fixtures (10.0%), well water (8.3%), and reclaimed water provided by the Town (6.7%).

A set of questions explored the respondent's knowledge of five water conservation practices. The first statement asks if *watering 1 inch per week, including rainfall, is sufficient water to maintain their landscaping*. There was a relatively high level of agreement with this statement. The mean was 6.92 (67.5% on the agree side). However, there was some uncertainty in that 20.7% were neutral and 11.9% were on the disagree side. The same response pattern was evident for *using soil amendments to improve soil conditions will reduce watering needs*. The mean was 7.02 (70.7% on the agree side). Again, uncertainty was evident in the 19.5% neutral and 9.9% on the disagree side. The statement with the highest agreement was for *the addition of mulch to landscaped areas will reduce watering needs*. There was much less uncertainty with a mean of 7.80 (83.6% on the agree side). The next statement *using native plants that occur naturally in North Carolina require less water than non-native plants* again earned a level of agreement with some uncertainty. The mean was 7.07 (71.2% on the agree side), but there was uncertainty exhibited in the relatively high neutral responses at 21.2%. The final statement garnered the lowest agreement level and most uncertainty. This was for *cycle-and-water is a more effective means of watering landscapes*. The mean was 5.80 (47.7% on the agree side). There was a very high level of neutral responses (33.9%) and 18.4% were on the disagree side for this statement. The level of uncertainty exhibited in four of these statements would lend to higher information flow to improve the knowledge of water conservation practices.

The respondents were asked about their awareness of ten Cary water conservation initiatives. They were most aware of rain barrels (66.3%) by a very wide margin. There was a degree of awareness for high efficiency toilet rebate (36.2%), watering exception permits (24.6%), and free water conservation devices (22.1%). There was somewhat limited awareness of Water-Wise workshops (17.6%), turf buy back program (15.6%), Block Leader program (13.1%), Beat the Peak (11.8%), water audits (10.6%), and Fix-A-Leak week (9.8%). As to participation in these programs, rain barrels (9.8%), high efficiency toilet rebates (5.8%), free water conservation devices (5.5%), and watering exception permits (3.3%) had the highest levels. There was minimal participation in the other programs.

The survey included a question asking the respondent *how they would prefer to receive water conservation information from the Town*. BUD at 83.2% was the preferred method by a large margin. Other important sources were postcards (67.5%), Cary's email list service (60.2%), Cary's website (59.3%), Cary News (55.5%), and Homeowners Associations (52.5%). Middling scores were given to Cary Parks, & Recreation Program brochure (47.4%), Raleigh News & Observer (45.8%), television (45.1%), personal interaction with Town staff (41.9%), Cary citizen website (39.6%), local businesses (39.2%), and neighbors (38.5%).

The larger set of questions in the survey examined respondent actions to conserve water. There were 65.2% of respondents who *in the past two years their household had taken an action to reduce its water use*. The most used methods inside the home included use dishwasher less or with fuller loads (69.0%), use clothes washer less or with fuller loads (68.6%), take shorter showers (62.5%), and repaired leak in faucet or toilet (53.6%). No other method exceeded 40% after these four. The most used methods outside the home included water lawn and shrubs less often (74.7%), followed alternate day watering rules (72.0%), wash car less often (64.4%), and add mulch to landscape areas (62.9%). Also with relatively high usage were watering 1 inch per week (49.0%), repairing damaged or leaking irrigation system (46.1%), using native plants to North Carolina (44.2%), reduced run times on automatic sprinklers (43.5%), and adding soil amendments (43.2%).

The final questions in the survey explored the respondent's awareness of four of the Town's watering ordinances. There was very high awareness for the alternate day watering ordinance at 89.0%. The awareness for the other ordinances was more limited including waste water ordinance (25.3%), water shortage response plan (23.1%), and rain sensor ordinance (21.7%). Those respondents who were aware of the alternate day watering ordinance were asked if they knew their watering day. They responded 27.6% even, 29.1% odd, and a very high 43.3% not sure.