

Western North Carolina Urban Area E-Government Report

A Case Study Analysis of Western North Carolina's Largest Municipalities

Brooke Crompton

Michael Davis

Thaddeus N. Huff

PA 693 E-Government

Fall 2009

Western Carolina University

Dr. Paul Dezendorf

I. Introduction

Municipalities face difficult choices in determining how much effort and resources should be allocated towards improving technological services as they continue to offer traditional services to the public at the same time. Therefore it is difficult to gauge the importance of different types of “e-investments” for any one precise government. At the local level, the question is not simply whether providing e-government is good in terms of convenience and transparency, it is whether or not the provision of all types of services makes sense financially. Given the local economic situation in most communities across the U.S., most cities have to make choices considering short-term investment rather than the long-term return private sector entities rely on. Because website development is generally considered an art rather than a science at the local level, only a limited amount of research exists that truly evaluates the effectiveness of web-enabled services provided for public consumption.

The available research in the field involves the broad evaluation of e-government in terms of implementation, for example, the general navigability, help features, and amount of information on-line. Therefore its empirical significance for local municipalities is limited. Performance measures such as number of hits, usage, speed, or cost/benefits are not examined in the public sector as easily either. This study builds on the work of Kaylor¹ in taking a more direct approach by objectively examining the quality and quantity of specific types of services offered on-line in local government. It analyzes in a case by case manner whether or not a certain element is available on the web and to what extent the service is truly web-enabling.

The purpose of the study is threefold; 1) To develop a scoring tool for use in analyzing e-government attributes, 2) To use the tool to score the largest ten urban areas in Western North Carolina, and 3) To provide a general outline for e-government use in terms of public relations using Mordecai Lee’s platform for public relations in governments². An issue that developed in the research design related to the size of Western North Carolina communities being relatively small; a broad diversity of populations is represented in the ten largest communities alone. In

¹ “Gauging e-government: A Report on implementing services amongst American cities. Kaylor, Charles. Government Information Quarterly Volume 18, 2001.

² “Government Public Relations A Reader”. Lee, Mordecai. CRC Press.

other words, Asheville has a population of 69,000, where the next biggest city, Morganton, has an approximate population of 18,000 in the city boundaries. The goal was not to focus on County government, nor was its purpose to study non-profit organizations. Thus, it was decided to study the actual municipalities themselves. Local governments have the unique responsibility of providing “hard”, basic services for the public, with economic development and quality of life measures becoming more common.

In addition, to establish a better sample of data to examine, the research team included additional cities and town websites in the neighboring states of Virginia and Tennessee to measure against. The sizes of the municipalities are comparable, and they have the same regional identification of being in the Appalachian region. The study reveals baselines and benchmarks for each population group, including minimum standards, best practices and cumulative norms. Five areas of governance, given traditional functions of local government services, emerged. After reviewing literature that does exist in the field and some cursory inspection of websites in the local area, a rubric was developed to gauge the relative usefulness of e-government in local communities.

It was hypothesized that the smaller the municipality, the less on-line services provided. This was a correct assumption. Therefore, it would not be as accurate or fair of an examination if all municipalities were rated in the same way. Four groups were divided up with Western North Carolina, Eastern Tennessee, and Southwest Virginia represented amongst each group.

This report is broken down into several user-friendly sections. The introduction is followed by section two, methodology, and section three, results of the scoring tool. Next in sections four through six direct analysis of the performance of each population group is explored. Section seven provides for traditional reporting of limitations of the research as well as recommendations for future research. Finally, a review of how e-government relates to Lee’s public relations model follows with an appendix of the output of the study.

II. Methods

Three examiners, who also happen to be the authors of this report, evaluated thirty-four websites representing thirty-four distinct municipalities in Western NC, Tennessee, and Virginia. It produced an evaluation of twelve Western NC municipalities. Using five functional areas, called Sections, it contains scoring for thirty-three specific functions of local government. The five Sections are: Commerce, Safety, Business/Development, Transparency, and Participation. Each function was scored on a one-to-four basis, with one being low and four being high. Where there was no presence for a particular function on the web, the city or town received a zero score.

In order to attain redundancy for each city or town, each of the three examiners scored approximately twenty-three sites. The scores were then averaged by dividing the total score for each metric by two, or the number of examiners for each site. Surprisingly enough, discrepancies amongst evaluator's scores were incredibly low. The Section areas are presented in table 1 in the Appendix. The scoring scale is presented after in table 2.

The four point scale provides a rating system that is inevitably consistent across the study. One point was given from basic information, or one way communication of the functional area. Two points were given for some two-way communication, mostly in the form of e-mail contacts about the subject area. Three points were afforded for enhanced forms and links that provide more interactive ways in which the public can use information and communicate with the municipality. Finally, four points were given for functions that allowed for transactions and a seamless flow of information back and forth, as well as allowing for all other functions.

Understanding that not all thirty-three metrics could receive a score of four points, the examiners reviewed each criterion before the individual scoring sessions took place to ensure consistent rankings for each specific function. The Western North Carolina cities and towns analyzed in this study represent the largest municipal jurisdictions in the twenty-three westernmost counties in North Carolina s defined by the regional economic development organization, Advantage West. Their populations and county populations are included in table 3 in the Appendix.

III. Results

As originally hypothesized, Western North Carolina’s largest twelve municipalities are on par with similar communities in the neighboring states of Tennessee and Virginia in the Appalachian region. Asheville, the largest in population within city limits amongst all of the groups evaluated, had the fourth highest cumulative score of all of the municipalities. Boone came in at number six, even though it was only the fifteenth largest community. In most of the groups, the North Carolina municipalities in fact rated near the top of the group. In every study there are bound to be outliers as well. In addition to Boone and Asheville, Waynesville, with a population of only 10,000 and in Group C, did surprisingly well. Their score of fifty-two placed them tenth amongst all of the municipalities in the study. Suffice it to say measuring Western North Carolina communities with other comparable states and cities, there was a positive revelation. The cumulative rankings for the top fifteen municipalities are displayed in figure 1 below.

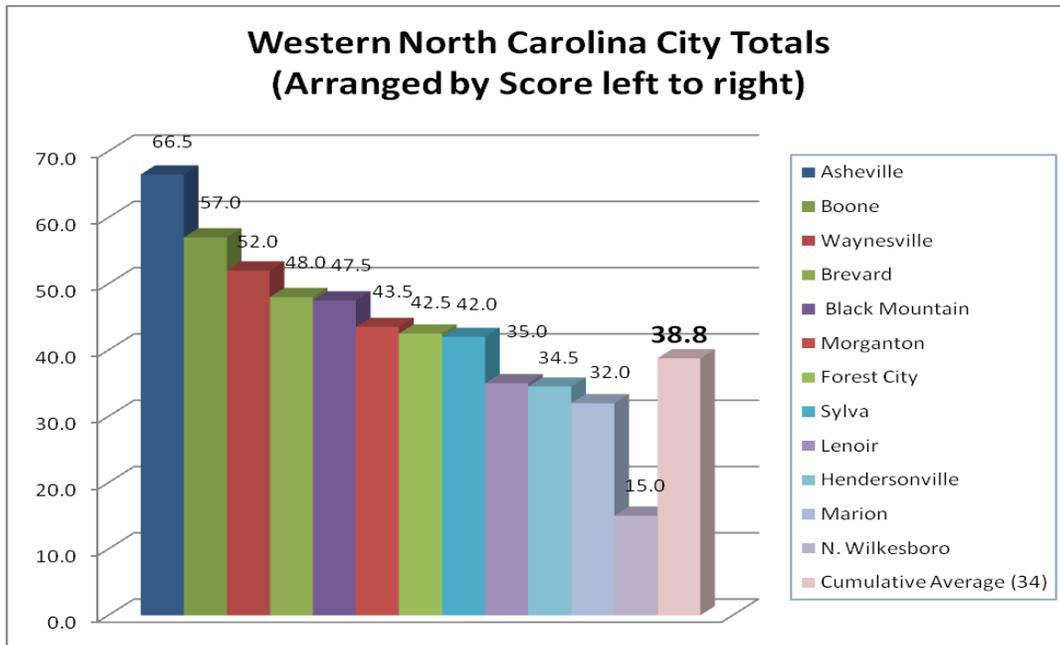
Figure 1

<u>Rank</u>	<u>Group</u>	<u>City/Town</u>	<u>Total</u>	<u>Population</u>
1	A	Lynchburg	88.50	67,000
2	B	Bristol, TN	78.50	24,000
3	B	Blacksburg	76.50	40,000
4	A	Asheville	66.50	69,000
5	B	Martinsville	58.50	15,000
6	B	Boone	57.00	14,000
7	A	Danville	54.50	45,000
8	B	Salem	54.50	25,000
9	D	Bedford	54.00	6,000
10	C	Waynesville	52.00	10,000
11	B	Morristown	51.50	25,000
12	A	Johnson City	48.50	56,000
13	B	Bristol, VA	48.50	17,000
14	D	Brevard	48.00	7,000
15	C	Black Mountain	47.50	8,000
		Cumulative Average (34)	44.76	19,324

Figure 2 shows the twelve Western North Carolina sites according to their rank on a median scale. Asheville is of course the highest ranked site, followed by Boone, Waynesville, Brevard, and Black Mountain. Eight of the twelve municipalities scored above the median of

38.75. It is also important to note that the median is much lower than the cumulative mean score of 44.76, indicating that outliers with extremely low scores have somewhat skewed the cumulative average.

Figure 2



On the other hand, in uncovering the outliers by population size, the results were mixed. In Groups A, B, and D, the median scores follow the trend of being lower than the means due in part to a much lower score by one or more of the group members. However in Group C, the median (43) is slightly higher than the mean (41.42), as shown in figure 3. With minute differences between group divisions but a higher overall difference amongst all groups, results suggest that the range of scores must be high. That proves to be the case, with Lynchburg, VA having the high score of 88.50 and Mount Carmel, TN posting a score of 9.50.

Figure 3

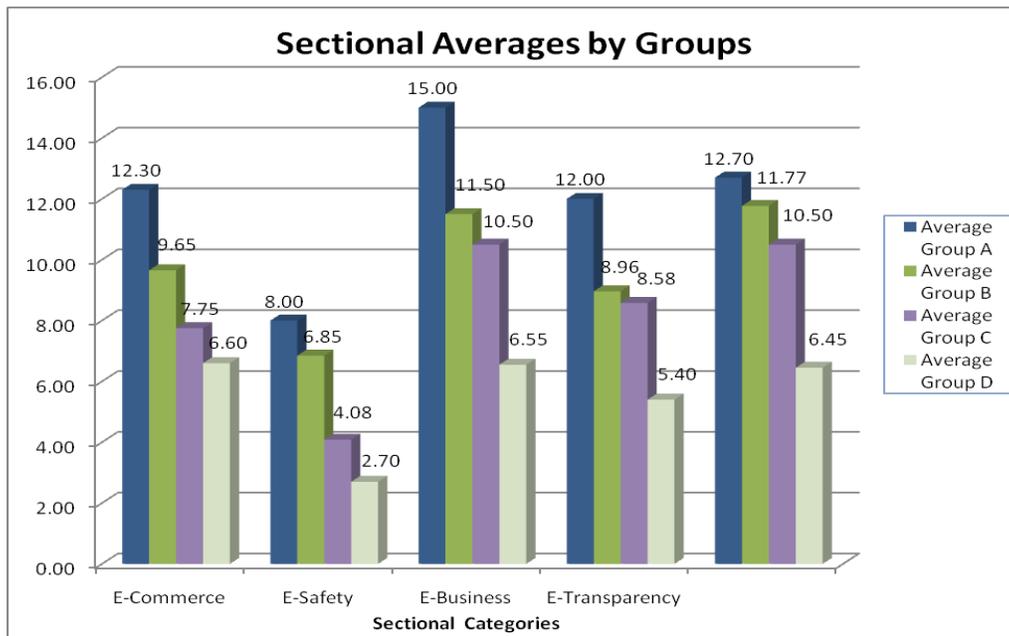
Group	Median	Mean
A	54.50	60.00

B	45.25	48.73
C	43.00	41.42
D	27.00	28.55
Cumulative (34)	38.75	44.76

A seemingly simple but important assumption was made in the study design phase that turned out to show positive results. It was assumed that the higher the population within the city the more services would be provided and thus, would achieve a higher e-score. In most cases, this proved to be the case. The mean cumulative score for all municipal sites was 44.76 with an average population of 19,324. Twelve of the top sixteen scores that were above the average were either in Group A or Group B (with the larger populations). While this evidence seems significant, something must be said for the positive outliers in the groups that showed much greater e-scores than their peers within the same groups. Brevard, NC and Bedford, VA, for example, while in Group D with populations of 7,000 and 6,000 respectively, ranked above the average cumulative scores. The same can be noted about other over-achievers amongst the groups, proving that it is still up to the individual municipalities whether or not to enhance their services through e-government.

As figure 4 shows, the Group A mean score in every category is higher than B, which is higher than C, which is higher than D. This would seem to support the theory that the bigger you are, the more services you can offer. However, in e-participation, the mean scores are considerably closer between A (12.70), B (11.77), and C (10.50). This is perhaps due to the low human resource scores by larger municipalities and anomalies in the scoring model. The most interesting finding here is that the threshold for providing services by population size may be becoming blurred between Group B and C. While their populations range from 8,000 to 25,000, Group C is much closer to the mean scores of Group B than other groups are in relations to each other. For instance, in e-transparency, the difference between groups is a mere .38, less than half a point difference on average.

Figure 4



The results in terms of categorical divisions were also illuminating. Across the board, from Group A to D, cities and towns seemed to do a better job overall with the e-commerce and e-business than they did with e-transparency and e-participation. The overriding assumption here was that in an effort to post as much on-line as possible regardless of size or resources, each would score a bit higher in areas such as e-participation, which did not normally require using an outside contractor or additional expenses to implement. However, in many cases, a few of them rather stark, even the most basic functions of public reporting council meeting minutes, codes, and actions were altogether absent from the web pages. Only two cities offered streamed access to council meetings, with only a handful more providing downloadable videos or links to council meeting by audio or video. In addition there was only one active survey or poll online and no e-

8

meetings scheduled. In the majority of cases, the human resources side of e-business was lacking greatly, perhaps due to the downturn in the economy and lack of available positions.

In contrast, more municipalities scored a four (transaction) in one area of e-commerce than expected. Nearly 30% of the municipalities offered paying some sort bill or tax on-line. While e-business was generally high scoring in aggregate in comparison with other functional categories, there were two relative surprises in the results. Far fewer larger municipalities were involved in true e-procurement at the top level, with only Lynchburg, Virginia scoring a four. In fact, e-procurement in general, or bidding and openness in the process, was the most disappointing of any of the services. On the other hand, GIS services were another story. Thirteen of the thirty-four municipalities offered some sort of interactive GIS service, with several others offering services at cost or mentioning their capabilities to serve the public and business interests.

A final consideration must be mentioned in regard to the findings of the study. The top scoring municipalities seem to be in or very near college towns. Blacksburg has the connection with Virginia Tech, Lynchburg with Liberty College, Asheville with UNC-Asheville, Boone with Appalachian State, and Bristol, TN, with East Tennessee State University-Bristol. A possible conclusion can be drawn from the fact that VA Tech is such a large institution, that it helped push Blacksburg up near the top of the list even though it is not a very large community in comparison with some of the others. Lynchburg, while not being a very large metropolitan area like Asheville, may have benefited from a closer relationship with the school and, so on. Future tests should be done to determine if any of these conclusions are true.

IV. Group A Analysis

Group A is comprised of the largest cities in the study; Asheville, NC, Lynchburg, VA, Johnson City, TN, Danville, VA, Kingsport, TN, and Blacksburg, VA, have populations that range from 40,000 to 69,000, with an average population of 53,650. Based on their population sizes, we hypothesize that these large urban areas will have the most professional websites and utilize the e-government practices more completely than other cities examined in the case study.

E-Commerce

At the cutting edge of the online business trends is e-commerce, which at its core means doing business online. In the public setting, cities not only utilize e-commerce for things such as paying bills, taxes and fines online, but also use it as a way to communicate about upcoming events within the city. The scores for the cities in Group A ranged from 0 to 4 in the e-commerce category, with an average of 2.7.

At a minimum, it would be suggested that cities of this population should have one-way information about where and how to pay taxes, utilities and fines. Kingsport, TN was the only city that did not have any information about payment of utilities on its website. Asheville was the only website that did not have any information about taxes on its website, and all cities met at least minimum requirements for information about fines and permits.

For a city of 60,000, which is a relatively large tax base, it is disappointing that Asheville has no information on its website about where, how and when citizens can pay their taxes. Also, it is objectionable that Kingsport, a metropolitan area with a population of nearly 45,000 not to have any information on the payment of utilities. At a very minimum, the website could tell people where they can pay utilities and provide an address and phone number. Again, as is the case with Asheville, Kingsport provides sound information on taxes, fines and permits, so it looks like this was just an oversight. Whatever the reason, though, the city fails to meet the minimum standards and should be advised of this immediately.

E-Safety

In this category, the municipalities of Group A scored much lower across the board than they did in E-commerce. E-safety comprises such areas as emergency management, road closures and detours, and traffic cams. Another key component of e-safety involves action requests. These allow citizens to report problems and/or issues to the city via its website. A best practice in this area has recently been discovered in Boston. The city recently worked to create an I-Phone Application where residents can report problems directly to the city via their phone. For example, if a resident sees a pot hole or a street light that is out, he/she can take a picture of it and the exact coordinates of the location are recorded and sent directly to public works department. None of the cities evaluated for this project have action requests this advanced, but it is a good example of what they can strive to achieve in the future.

While the phone is the ceiling, the floor should at least be implemented by all of the cities. The floor, for example, could be a place for residents to report a problem on the website. Or, it could even be as low as a phone number for residents to call and report the problem. All of the municipalities except Johnson City, TN implemented some variation of the floor in terms of action requests/complaints on their websites for residents.

Lynchburg led the cities in Group A with an overall score of 14.5. In terms of emergency management, Lynchburg was the only municipality to have an entire link and resulting page devoted entirely to “emergency preparedness”. This page boasts hurricane and terrorism preparedness tips and kits residents can purchase. It also has links to other emergency preparedness websites, which residents can use to access multiple emergency management tips specific to their area.

Lynchburg was also the only city in Group A to have a live traffic cam. While Asheville did not have a live traffic cam, it did have a street and road information page that details what roads are closed and outlines the detours to take. Also, on the front page of Asheville’s website was a prominent link to the Interstate 40 closure and detour. This is not only helpful to residents, but tourists who are visiting the area and may not know Asheville is still accessible.

The area of road closures and detours was another weak point for the cities in Group A. Only Lynchburg and Asheville had this information on their websites. As previously discussed, Asheville does a relatively good job of informing residents of these issues on their website. Lynchburg, on the other hand, simply mentions the roads closed and does not offer any detours, which yielded a score of only 1.0. This would be considered the bare minimum for municipalities of the size examined in Group A, but Danville, Johnson City and Kingsport all fail to meet this minimum requirement.

Overall, the average score for all of the municipalities in Group A for e-safety was 8.0. Lynchburg received the highest score of 14.5 and Kingsport came in last with a score of only 4.0. Lynchburg met at least minimum requirements for each of the categories evaluated in e-safety, while going above the floor in most categories. However, Kingsport , Johnson City and Danville failed to meet the minimum requirements in most instances.

E-Business/Development

This section, which deals with issues like zoning, GIS and business permits, is important to residents and businesses who want to start and/or expand business in the city. It is important for the economic development of municipalities, because the more information that is readily available and accessible online, the more likely businesses are to feel positively about the city. In the economic times in which we are currently living, this is especially important for municipalities.

It seems that the municipalities of Group A realize the importance of this section, because the overall average score for e-business/development was 15.0, which is nearly twice the average score for e-safety and roughly 3 points higher than the average score for e-commerce. Every municipality met at least minimum requirements for every category within the entire section, except Asheville received a 0.0 for property assessment. However, this was not a surprise, because they did not have any information about property tax payment on their website, as mentioned in the e-commerce section.

The three categories in which the municipalities in Group A scored the highest were zoning, GIS and simulation of town. The scores for each of these categories averaged out to 3.0. In the zoning category, all of the municipalities went above and beyond the minimum requirements. For example, most websites had zoning maps and links to other websites on their city website. In all of the other categories – e-procurement, property assessment, code enforcement, and business permits – the scores averaged to 2.0 each, which again added up to an overall average score of 15.0.

Lynchburg again scored the highest in e-business/development with a score of 21.0, followed in second place by Asheville with a score of 17.5. In all of the categories in e-business/development, Lynchburg went above and beyond the minimum standards to include at least two-way communication and links to other websites. New and existing businesses can find a wealth of information regarding zoning rules and regulations and permits on Lynchburg's website, which is advantageous to the city's economic development and growth.

Transparency in Governance

This section is perhaps the most important for citizens, because transparency into how government operates has the potential to allow citizens to develop trust in their elected officials, as well as in their bureaucracy. Categories in this section include things such as city council

meeting dates, times and minutes, contact information for city council members, and strategic plans for the city. In this section, the municipalities in Group A scored much lower in each individual category for an overall average total score of only 12.

The very minimum that cities should have on their website for transparency into city council and staff should be names, pictures and contact information for city council members. Websites should also include minutes from previous meetings and agendas for upcoming meetings. In these two areas, each of the municipalities in Group A met these minimum standards; however, with average scores of only 2.0 for each category, more could be done in these areas. Asheville was the only city to receive a score of 3.0 for information on city council meeting minutes and agendas; therefore, setting the ceiling in this area for Group A.

The two areas in which the municipalities of Group A scored the lowest average scores were in town charter and town code with scores of only 1.0 each. Minimally, each city should at least have these things listed somewhere on their website without any additional information, as each city did with their town code. In the town charter category, however, neither Asheville nor Danville gave any mention of it at all.

Finally, in the categories of video and audio of city council meetings, several cities fell below the floor. Having either a video or audio of the city council meetings is important, because not everything that happens always makes it to the minutes, and citizens have the right to know everything that goes on these meetings. Also, for cities of the size of the cities in Group A, having these features on a website should not be a difficult thing to manage.

Yet, neither Johnson City nor Kingsport has a video option on their website, and neither Asheville, Johnson City, nor Kingsport have audio on their website. Since Asheville has the video on their website and directions for how to watch the council meetings on the Asheville television channel on their website, the lack of an audio option is understandable. Kingsport and Johnson City, though, do not have either of the video or audio, which fails to meet the minimum standards.

E-Participation/Awareness

This section is a continuation of transparency into governance, which again goes a long way toward building citizen trust in government and bureaucracy. E-participation includes categories such as hours of operation, information requests, information for city staff members,

and job openings. The cities of Group A did only 1 point better in this category, with an overall average score of 13.0.

For the most part, in each of the categories within this section, the municipalities met the minimum requirements of at least posting some nominal information on their websites. However, in the categories of e-meetings scheduled and surveys/polls, the average score for each of these categories was 0.0. Only Lynchburg met the minimum requirements in these two categories with a score of 1.0 in each. Therefore, one of two things can be assumed to be true about these categories: 1) they are unreasonable things by which to judge the quality of a city website, or 2) the municipalities in Group A fail miserably to meet the minimum acceptable and reasonable requirements.

The municipalities of Group A do a much better job in providing information about hours of operation, information requests, and staff information with average scores of 2.0 for each of these categories. These are important categories for citizens, because they provide them with information about when and how to contact city staff members if the citizen has a complaint or issue that needs to be addressed.

Best Practices

While each municipality had at least one unique aspect of its website that could be considered a best practice, there were a couple of items that are worthy of further mention. In Kingsport, the city manager has a blog which is located on the website. While there is only one post available so far, it has the great potential to inform citizens of all of the business and upcoming trends in the city government. Perhaps in the future, he could post something weekly, bi-weekly, or monthly to keep citizens informed.

Another best practice that deserves further discussion is Asheville's publicity of the Interstate 40 closure. Many tourists do not know exactly where the rock slide happened and what is still accessible to them. This has had a negative effect on tourism and dollars spent in the western part of the state. However, Asheville is doing its part to assure tourists that the city is still fully accessible and "open for business". This is particularly important to have during the holiday season, which is a big part of the tourist season for Asheville.

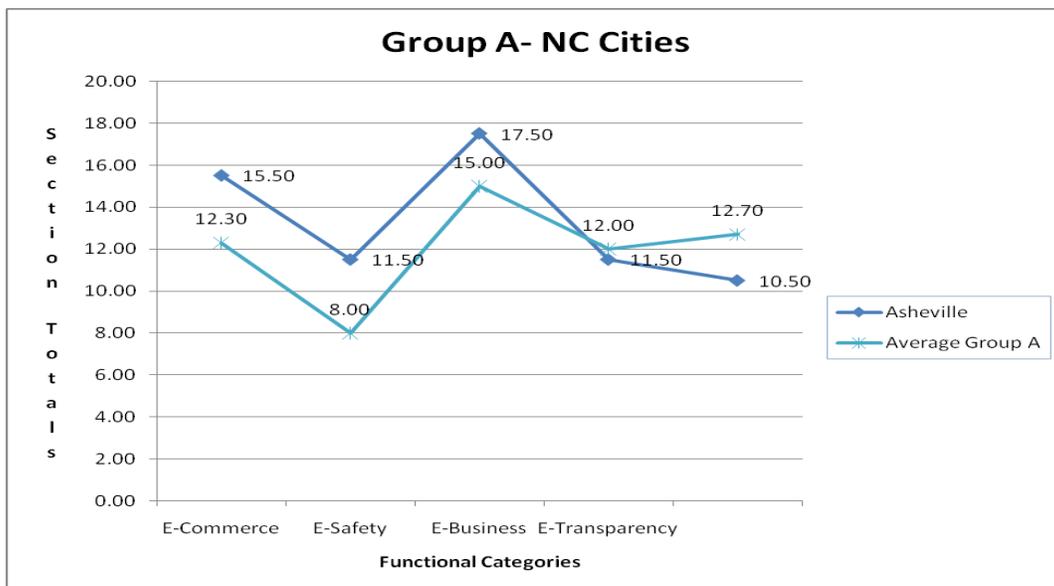
Conclusions

The overall average score for the municipalities in Group A was 60.0. The highest scoring website was Lynchburg which scored 88.5, and the lowest scoring website was Kingsport with a score of 42.0. To be fair, Kingsport’s website is newly revamped as of November, and it seems that the city manager has a real interest in making it the best it can be. One can only assume that if it were to be revisited in a year’s time, Kingsport’s scores would improve dramatically.

Asheville, the Western North Carolina representative of Group A, came in second place with a score of 66.5. Its average scores by section are presented in figure 5. It is impressive that Asheville beat out Danville, Johnson City and Kingsport. It is even more impressive to realize how many best practices exist on Asheville’s website. However, it is eye-opening to realize that Lynchburg, a city of nearly the exact same population, met at least the minimum requirements for every single category scored, and Asheville received nine scores of 0.0.

This case study shows Asheville what they can hope to achieve, but more importantly, it should show the city that it is possible for a city of its size to meet the requirements evaluated here. Ideally, the city would use this information to update its website and better inform its citizenry of all that is happening within the city government and bureaucracy.

Figure 5



V. Group B Analysis

Group B is comprised of the cities with the second largest populations in the case study. The cities – Salem, VA, Morristown, TN, Bristol, TN, Morganton, NC, Lenoir, NC, Bristol, VA, Greenville, TN, Radford, VA, Martinsville, VA, Elizabethton, TN, Boone, NC and Hendersonville, NC – have populations that range from 13,000 to 25,000 with an average population of 17,833. Based on their population sizes and probable resources, we hypothesize that these websites will not be as professional the websites in Group A, but will more fully utilize the e-government practices than those cities in Groups C and D.

E-Commerce

As hypothesized, the municipalities in Group B performed inferiorly to the municipalities of Group A in the area of e-commerce. The Group A municipalities received an overall average score of 12.3 while Group B scored 9.65. Blacksburg and Morganton were awarded the two highest overall scores in this section with scores of 19.0 and 14.5, respectively. Lenoir and Hendersonville, on the other hand, received the lowest scores with 5.0 each.

Information about and payment of fines received the lowest overall score for all of the municipalities in Group B with an average score of 1.0. For cities of the size of the cities in Group B, it is acceptable to expect that this information would be available on a city's website; however, only Blacksburg received a high score of 4.0. The rest of the cities either met only minimum benchmarks or ignored this area all together.

The Group B cities performed better in the categories of taxes, permits and events, with average scores of 2.0 in each. In the taxes category, Blacksburg and Morganton both scored 4.0, because each of these cities allow citizens to pay taxes online, as well as offer other tax related information. Boone, Lenoir, and Greenville each failed to have even minimal information about taxes and payment of taxes on their websites, which yielded scores of 0.0 for the cities in this category.

In the permits and events categories, Boone was the only city to score 4.0 in each. Every other city met at least minimum benchmark requirements for the categories, except for Greenville, which received a 0.0 in the permits section. These are issues that are very important to residents, and the information needs to be present on a city's website.

E-Safety

Again, as hypothesized, the Group B cities scored slightly lower in e-safety than the Group B cities. Group A received an overall average score of 8.0, while Group B scored 6.85 for this section. Bristol, TN scored the highest in this section with 14.0, followed by Blacksburg and Bristol, VA, which both scored 9.5. The two lowest scoring municipalities in this section were Lenoir and Greenville, which scored 3.0 and 2.0, respectively.

In the categories of action requests and personal permits, the municipalities scored the highest with average scores of 2.0 in each category. This means two things: 1) these categories were the strongest areas in the e-safety category, and 2) with 2.0 being the highest average score, e-safety is a weak overall section for these municipalities.

In emergency management, road closures/detours, and traffic cams categories, the municipalities of Group B only scored average scores of 1.0 in each category. While some municipalities performed well in these areas, the overall implication is that there is much room for improvement, as meeting the minimum requirements may not be enough in the e-safety section.

E-Business/Development

The category of e-business/development showed strong improvements for the cities in Group B, which boasted an average overall score of 11.5, which was the second highest scoring section behind only e-participation/awareness. Bristol, TN and Boone scored the highest in this section with scores of 18.5 and 16.0, respectively. With a score of 5.0, Greenville scored lowest in this section.

The highest average scores came in the categories for zoning, GIS, code enforcement and business permits, with scores of 2.0 each. Again, as was the case with e-safety, the highest average score for a section was 2.0, but this time, the 2.0 scores far outweighed the 1.0 scores, making e-business/development a stronger scoring category. However, with minimum requirements barely being met in this category as well, there is much room for improvement among the Group B municipalities.

E-procurement, property assessment, and simulation of town each received average scores of 1.0. While at least minimum requirements were met by a majority of the cities in

Group B in these categories, cities such as Lenoir, Greenville and Elizabethton still underperformed. It should be advised to these cities of the minimum requirements – listing information pertaining to these categories – and they should be implemented in order to better serve the residents and business communities of these cities.

Transparency in Governance

With an average overall score of 8.96, this section was the second lowest overall scoring section for the municipalities of Group B, in front of only e-safety. Blacksburg and Bristol, TN scored the highest in this section with scores of 19.5 and 18.0, respectively. Both of these municipalities met at least the minimum benchmark requirements for each category within the section, and often times far exceeded the minimum standards.

At the other end of the spectrum fell Greenville and Elizabethton with scores of 4.5 and 3.5, respectively. Greenville failed to meet even the most minimum requirements in three out of seven categories, while Elizabethton failed to meet the minimum requirements in four out of the seven categories. For the categories in which these cities did have information, it was only the minimum required to receive a score; they never once went above the minimum standards. In this category, perhaps more than any other, this is unacceptable, because the lack of information provided in this section is directly correlated with a lack of information provided to citizens about their governing body and the decisions it makes, which affect every citizen.

The categories in which the cities of Group B scored the highest were city council meeting minutes, city code and information about city council members. The scores for each of these categories were 2.0. While this score indicates that the minimum requirements were met and barely exceeded, at least the minimum requirements were exceeded. This is especially important in these categories, because this is where residents can gain knowledge about what decisions were made at previous council meetings and how to contact a councilperson if need be.

The categories in which the lowest average scores were received were city charter, video of council meeting, audio of council meeting, and strategic plans. The score for each of these categories was 1.0. While it is positive that at least the minimum requirements were met, for cities of the size of these cities, the minimum requirements should have been far surpassed in these areas.

Again, the overall average score for transparency in governance was 8.96. This was far lower than the 12.0 that Group A received, but that was expected. The issue is that the transparency in governance section received the second lowest overall score for Group B, which could potentially demonstrate a lack of trust in government by the residents of Group B cities.

E-Participation/Awareness

While the previous section's results were less than enthusiastic, the overall average score for e-participation/awareness boasted the highest overall average score for Group B municipalities with a score of 12.0. This is an important score, because it shows the level of commitment that Group B cities have made toward ensuring that citizens can actively participate in their local government.

Bristol, TN scored the highest overall in this section with a score of 16.0. Bristol met and/or exceeded minimum requirements for each category within this section except for in the e-meeting scheduled category. As previously discussed in Group A, this seems to be the rule not the exception in this category.

Elizabethton came in last in this section with a score of merely 5.0. In four of the nine categories in this section, Elizabethton received scores of 0.0. In the other five categories, it only received scores of 1.0. Elizabethton needs to be made aware of this situation and make a renewed commitment – much like the other cities in Group B – toward allowing residents to have an active participative role in their government.

In the categories of e-meetings scheduled and surveys/polls, the average scores for the Group B municipalities were 0.0, which was the same as in Group A. Based off of this information, it can be noted that perhaps having anything at all in these categories is going above the proverbial call of duty on behalf of a municipality.

Best Practices

The Town of Blacksburg offers Blacksburg Alert, an innovative solution for improving communications between government agencies and citizens. By signing up through an e-mail address, citizens receive alerts in real time for emergency notifications, road closings, inclement weather announcements, and other service related information. There is also an option of receiving this information via cell phone and fax machine. The service is an excellent example of

using simple technology to get public information out to the citizens in no time at all. A few other sites had similar features, but Blacksburg's was the best.

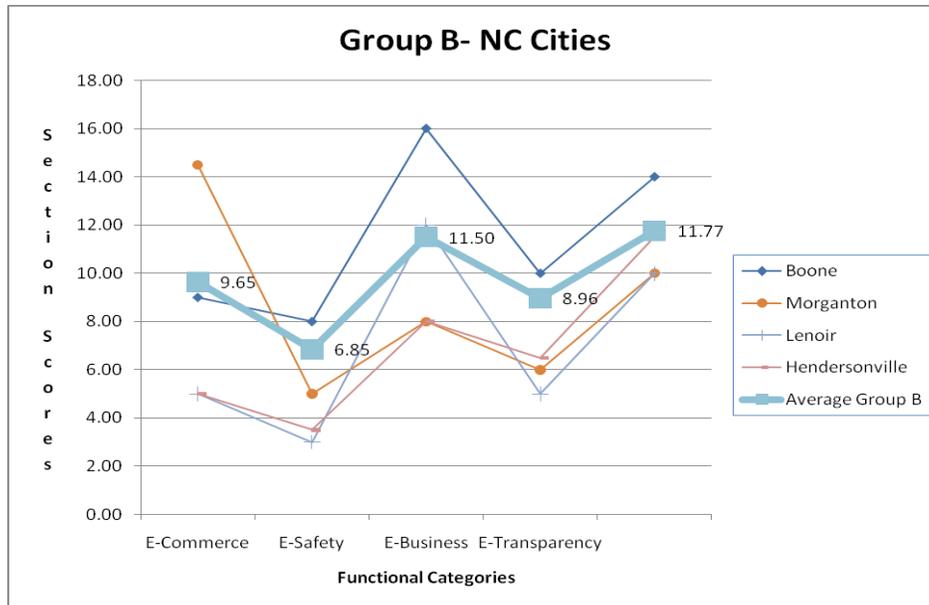
Another effective service is offered in Morristown, TN. In a unique way of packaging services to ensure citizen participation and transparency, EnerGov.net Citizen Access provides on-line transactions to contractors, citizens, and outside agencies who wish to conduct business over the net. Services included applying for permits, checking on available property, managing invoices, and paying for numerous types of transactions.

Conclusions

The overall average score for the municipalities of Group B was 48.73, which as hypothesized was lower than the overall average score of Group A. The highest scoring website in Group B was Bristol, TN which had an overall score of 78.5. The lowest scoring website in Group B was Greenville, which had an overall score of 23.0. The Western North Carolina representatives in Group B were Boone, Morganton, Lenoir and Hendersonville, which had overall scores of 57.0, 43.5, 35.0, and 34.5, respectively. The Western North Carolina municipalities in Group B finished in the middle to lower part of the group. When the populations and resources for the group are so closely aligned, it can only be assumed that the difference in the websites stems from a commitment made by city officials.

Therefore, the city officials in the Western North Carolina municipalities need to make a renewed commitment to serving their residents via their websites. Whether they like it or not, more and more people are doing more and more business online, and the only way in which to remain relevant and competitive is to embrace this trend. The sectional scores of The Western NC communities are graphed in figure 6.

Figure 6



VI. Group C Analysis

The following cities listed are categorized based on city population. The city or town population for group C ranges from 8,000 to 13,000 with a median population of 9,833. A total of six municipalities were assessed and rated. Waynesville, Sylva, and Black Mountain, all from WNC; Jefferson City, Alcoa, Sevierville; all from Eastern Tennessee.

E-Commerce

E-commerce refers to the ability to do business online. With an average population of 9,833 these municipalities should be expected not to have some items of E-commerce available on their websites; partly due to the lack of population the municipality serves. A cumulative average of all sub-categories listed under E-commerce is 1.72. All cities under E-commerce should have at a minimum one-way communication.

All cities except Sylva and Waynesville met the minimum requirements for utilities. Sylva scored a 0, while Waynesville scored a 4. All others scored within the cumulative average. Sylva serves a community of 13,000, and Waynesville serves 8,000 within their town. Sylva serves as an outlier by not even meeting the minimum requirements. There is a 2,000 difference in population between the two towns, and Sylva represents the larger town, yet did not meet the

minimum standard. While Waynesville serves as the forerunner between these cities by utilizing “e-pay” for their utilities, it is not indicative that this would be suitable for all cities of similar size, because it was the only 4 scored by any city for any category. What is apparent is that Sylva a town with only 2,000 less than the highest scoring town does not provide any information about utilities; which does not meet the standard.

When looking at the other categories, all cities meet the standard for Taxes, and Facilities/Events. These are the only categories in which all cities scored a 1 or higher for individual categories. Which poses a hypothesis, Is Tax information and Facility/Events information the more common element for E-commerce in cities of this size? Given the current data, yes, these are the two common elements that all cities share.

Black Mountain NC, Alcoa TN, and Jefferson City TN are the only cities that scored the minimum in all categories. These three cities serve a population with a variance of only 2,000 from the highest to the lowest, and these three successfully met the standard in all 5 sub-categories of E-commerce. These three cities should be an example that the other cities could look at for guidance. If 50% of the cities can provide at a minimum one-way communication on E-commerce, so can the others. Waynesville has the overall highest cumulative score for E-commerce. Their score is 12, and they also have the highest population.

E-Safety

Citizens should be able to access information regarding the safety of themselves, and the safety regarding others and their town. The sub groups located in E-safety are, (Emergency Mgt., Road Closures/detours, Action requests/complaints, Traffic cams, and personal permits/dog, bike, etc.). The cumulative average of all sub-categories for all cities in E-safety is .82 which does not meet the minimum standard of one-way communication.

At a minimum all websites should have a standard for the office of emergency management. Only one city communicated this, and it was with a score of 1; the town was Black Mountain, NC. All other municipalities did not receive a score for category. Although these are smaller cities in population, each municipality should have a contact number listed for their emergency management office, or the Point of Contact in case of an emergency, and based on the results, only one website was successful in giving this information.

Road/Closures were apparent in only one town, Black Mountain NC. Black Mountain scored a 1, while the others received a 0. Road/Closures must not be an apparent issue for towns of this size. This might be more beneficial for towns that intersect or are adjacent to a major highway or an Interstate. Action Request/Complaints received the most scores of any other sub-category; scores ranged from 0-3, and averaged a 2, also the highest average. This shows that most all towns have at least e-mail capabilities for this category. The only town not scoring in this category is Sevierville TN. Under the Traffic Cams section, Sylva NC was the only town to receive a score. They received a 3 for enhanced links/forms. All other municipalities received a 0. Traffic Cams are a common element in larger cities, so must smaller cities might not find them very feasible. They are also becoming readily available on major highways and Interstates, so Sylva NC represents an outlier in this category. Personal permits received a cumulative average of 2. From this data each town should have at least basic e-mail capabilities for permits.

Overall, the cumulative average for all categories was 4.08. Of the cities listed in Group C, 50% scored at or above the average. All of the cities above the average were, Waynesville NC, Sylva NC, and Black Mountain NC. All of these cities are from Western North Carolina. The remaining cities represent Eastern Tennessee, and did not meet the average. Sevierville TN did not even score for any of the sub categories. Conclusively, E-safety is a demanding topic, and all municipalities should strive for public awareness, and should fall under a minimum of one-way communication.

E-Business/Development

This section refers to the ability for local businesses to conduct their affairs online. This section also includes the development of the municipality. The sub-categories are: *E-procurement, Property Assessment, Zoning, GIS, and Video of Town, Code enforcement, and Business permits*. The cumulative average of each sub-category for each town is 1.5. Which means, every city, hypothetically should score at a minimum of a 1-1.5 for each category. The cumulative section average for every city was 10.5. This number is the total sum of all sub-categories for each city, and should be equal to or greater than 10.5.

E-Procurement is the ability for businesses that provide a service to place a bid online for a service the city or town might need. Many municipalities are now placing the bid sheets, forms,

and even the actual bid online. The cities listed in Group C met the minimum of a 1 for their average. The only city that did not score in this category was Black Mountain, NC. All other cities scored within the 1-2 range. In reference to the scoring model no city in group C has any enhanced links/forms, or the ability to perform this transaction online. They all fall in the limited information or e-mail category. For cities this size, E-procurement might not be viable tool for businesses since no city listed currently uses this practice.

Property Assessment is the ability to search for information on property, including, price, ownership, and location. Only two municipalities were unable to meet the average, both scoring 0. Every other city scored at least a 1, some scored 2. At a minimum each website should provide contact information on where citizens can find information on property owned in their town or county. No city provided any information above e-mail capability; the highest score was 2.

Zoning and GIS are two categories that can be grouped together, as both effect each other on the same level. Zoning was the only category in which all cities registered a score. Empirically, we can assert that Zoning must be a high priority for cities of this size. For cities of this size, at a minimum, one-way communication must be present. Every municipality should have at least a zoning committee, if not, a zoning board, or department. Every municipality scored in the 1-3 range, averaging 2. So, all cities exceeded the cumulative average of 1.5 by providing at a minimum, e-mail communication. 3 of the 6 cities scored a 3. All of these cities scoring a three are from Western North Carolina. All others scored either 2 or 1. Jefferson City, TN was the only city to register a 1. GIS (Geographic Information Systems) registered scores from 4 towns. Those who scored ranged in the 1 score, and one outlier scored a 3.5. Municipalities of this size might not see it feasible to use GIS. Jefferson City TN, was the only city to utilize online GIS mapping.

All cities except for one had information regarding a video simulation of their town. Having a video of your town should be a viable tool for any town website regardless of size. Business permits at this level of town size should be available by one-way communication. There should be at least a phone number of whom to contact. Most cities are in the 2 category. This means, there is at least e-mail capability for business permits.

Overall, most cities met the minimum scores based on the cumulative averages. Three cities met the overall average, which were, 10.5. Waynesville NC scored a 15, Alcoa TN scored

a 12, and Sylva NC scored an 11. All others scored below 10.5. Two of the three listed are towns from Western North Carolina.

E-Transparency/Governance

This section covers local government's ability to create a level of transparency with citizens. Group C was rated on the following areas: *Meeting Minutes/Agenda, City or Town Code, City or Town Charter, Information access/elected officials, Video Council meetings, audio council meetings, and Strategic planning/vision*. The cumulative section average is 1.22. The overall section average is 8.58. At a minimum all cities or towns should have at least one-way communication for all categories. We hypothesize that cities of this size will more than likely not score in Video Council meetings or Audio council meetings.

All cities in Group C scored a 1.5-3 range in Meeting Minutes/Agenda. For cities this size we can reasonably assert that at a minimum there should be basic e-mail capability for meeting minutes. Every municipality should have their meeting minutes posted on their website. If they do not, they should have information posted on how to obtain these minutes. All cities were successful in doing this. All websites also had their town code available for citizens. Also, each town/city was successful in providing information regarding elected officials. At a minimum, all towns/cities should have basic e-mail information for elected officials. Not only does this increase transparency, it creates better rapport with elected officials and their constituency. All towns met the minimum with e-mail capability. Sylva, NC scored the highest with a 3. This city provided enhanced links for their elected officials.

Offering Video or audio clips of their council meetings is not a common practice amongst cities this size. Black Mountain, NC was the only city to register a score for either of these categories. Black Mountain recorded a 2 for both categories. Black Mountain is one of the smaller cities from Group C. Their population is only 8,000. This shows that other cities could be using the web to either broadcast their town board meetings, or by having audio clips available for public record. Ultimately, having these minutes online would be a great practice, and a best practice would be archived videos of the board meetings. This would increase transparency dramatically. If citizens are unable to attend the board meeting on a certain date, they can watch it on a later date.

Strategic planning is a priority for any municipality. Every city/town should have a vision for their future. Group C had only 3 score in this category, Black Mountain NC, Alcoa TN, and Sevierville TN. At any level of government, regardless of population, a comprehensive plan for the future should exist. At a minimum these websites should provide the contact information of the department overseeing the city/town plan. The three that failed to meet this are, Waynesville NC, Jefferson City TN, Sylva NC. Black Mountain was the only WNC representative; all others are from Eastern Tennessee.

Overall, cumulatively this was the third highest scoring section, with an average of 8.58. Looking at the data, most cities met this standard, or fell closely behind. Black Mountain NC scored the highest with 12.5. They represent the outlier for this section. This high score is directly correlated with the “e.gov” portion of their website. Black Mountain has dedicated a section of their website to e-gov, which has increased transparency, and their score is reflected by this. Black Mountain serves as a model for what other cities of similar size should be doing. Increasing transparency starts with the effectiveness of a websites ability to relay information to the citizenry.

E-Participation/Awareness

This section is a continuation of transparency. In this section the cities were assessed on the following categories: *Schedule/Hours of Operation, Document mgmt system, Information requests, Staff information requests, Classes/Programs, E-meetings scheduled Surveys and polls, Job board/policies, and Job applications.* The cumulative average for this section total is, 10.5. This section is tied with E-business/development for first place in highest average. The cumulative average for each sub-category is 1.16. Based on this result, every municipality should score at least a 1 in every category.

Each municipality scored at least a 1 or higher in 4 categories. *Hours of operation, Job applications, staff information access, and information request.* At a minimum each municipality should have their hours of operation posted on the website. Each town was successful in doing so. Information requests are also an important component for E-participation. If the constituency is unable to request information, their ability to participate is

diminished. All municipalities scored either a 2 or 3 in this category; meaning at a minimum e-mail capability was present.

Staff information access is was also present for each municipality. Staff as well as the citizens must be able to access information accordingly, and each website has this capability. Every website was also successful in posting job application info. No matter what the size of the city/town is, job applicant information should be available for the public. All cities except for Sevierville TN, and Jefferson City TN scored a 2. These cities only posted basic contact info for job applications. The other cities should serve as a model for other cities of similar size to follow.

Most all cities failed to have an adequate document mgmt system. This refers to the ability to navigate around the website. For instance, “search box”, “index”. Only two cities had this capability, Black Mountain NC, and Sevierville TN. Once again, Black Mountain NC is smaller than some of the other cities, and still has a capability that others do not have. Every website should have search capabilities or an index. When viewers of the website are having problems finding something, they can use these features to limit their time in finding what they need. These features are an essential to having an effective website and increasing awareness and participation.

Overall, two categories served as outliers in this section; Classes/Programs and E-meetings. Jefferson City TN and Sevierville TN were the only two cities that offered any information on classes/programs on their websites. These cities are located in Tennessee. Although, Alcoa TN did not have any information on upcoming or current classes, this could be a common practice for Tennessee cities/towns. E-meetings recorded only one score, and Black Mountain NC was the city. They scored a 1. Their e-gov link will dramatically increase their ability to relay information to citizens, and increase transparency and participation. Their e-gov link and ability to create transparency and awareness gave them the highest score for this section; score of 13.

Best Practices

Two of the best practices for Group C municipalities came from the Western North Carolina representatives Sylva and Waynesville. Each of these websites was very user friendly

and considerate of citizens who may wish to use them. This is probably why they received high scores in the group.

Sylva's best practice came in the form of the Suggestions page. This page was dedicated solely to residents' suggestions for the Town. While every suggestion may not be implemented, at least the citizens have the ability to express their views to the government officials and bureaucrats responsible for creating and implementing policies that directly affect citizens. This page has the ability to make citizens feel like they have an active role in their government, which can ultimately increase their overall satisfaction with their local government and government officials.

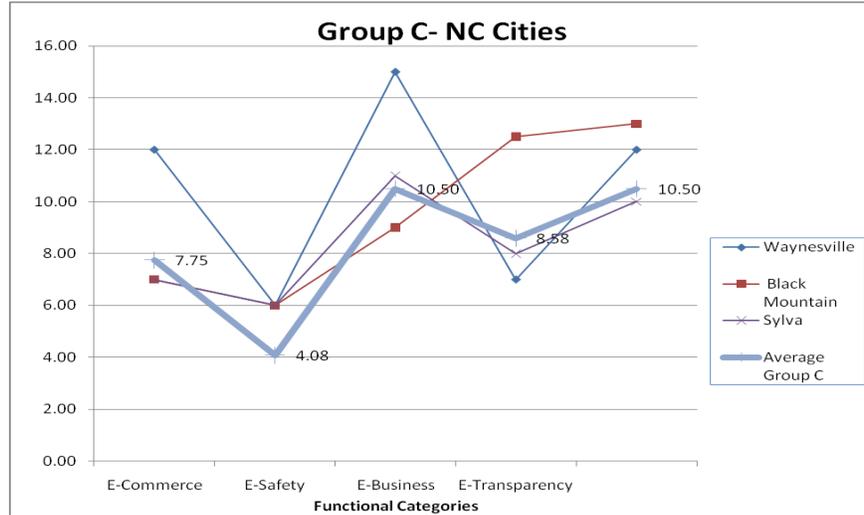
Waynesville's best practice was along the same lines as Sylva's best practice. On the Waynesville website, there is a message board that allows residents to freely converse with one another about issues facing the Town. This has a couple of different important outcomes. First, it allows citizens who might otherwise never be able to get together the opportunity to "meet" and discuss any issues that they believe are important and worthy of discussion.

Second, the message board allows town officials to gauge public opinion on certain issues. This is important, because Waynesville is growing at a faster rate than ever, and citizen's opinions need to be taken into consideration. However, it is important for the town officials to note that perhaps not every citizen is an active participant on the message board; therefore, public hearings are still an important part of the political process.

Conclusions

The overall section total average for all categories is 41.41. The three highest scoring cities/towns for all of Group C are: Waynesville NC, Sylva NC, and Black Mountain NC. These municipalities are all representatives of Western North Carolina. Group C is lead by these three WNC municipalities. They serve as the model for the other cities/towns. The other cities are represented by Eastern Tennessee. The only city to reach the overall average is Alcoa TN; with a score of 44. The other two, Jefferson City, and Sevierville scored a 33, and 30, respectively. Waynesville NC has a city population of 10,000, a little higher than the overall average of 9,833, yet Waynesville came in first place, and the other two WNC cities came in 2nd and 3rd place. Overall, the other cities who did not meet the standard should use the Western North Carolina as the standard for cities/towns of this size. The scores are displayed in figure 7.

Figure 7



VII. Group D Analysis

The following cities listed are categorized based on city population. The city or town population for group D ranges from 5,000 to 8,000 with a median population of 6,634. A total of 10 cities/towns were assessed from Western North Carolina, East Tennessee, and Virginia. The cities/towns are North Wilkesboro NC, Brevard NC, Town of Forest City NC, Newport TN, Mt. Caramel TN, Town of Erwin TN, City of Galax VA, Town of Marion VA, and City of Galax VA. Based on population, these municipalities should fall right behind Group C.

E-Commerce

For cities with an average population of 6,634, we would expect there to be at least one-way communication in terms of utilities. All cities except Newport TN met this standard. Brevard NC and Forest City NC were the only two that offer e-pay for their utilities. The others

fall in the 2 range. The cumulative average for all sub-categories is 1.32, so all municipalities should score at least a 1 in all categories.

Information regarding Taxes is also posted well on these websites. 8 of the 10 websites provided at least one-way communication. Newport TN and Mt. Carmel TN were the only two that did not register a score. Brevard, Bedford, and Forest City recorded a 2; providing E-mail capability for these websites; Brevard and Forest City are both WNC towns.

The permit category is also led by WNC. All except for Covington, and Mt. Carmel met the minimum standard of one-way communication. Brevard and Forest city registered scores of 3. They provided enhanced/downloadable links for permits. Both have the same population, and only 2,000 more than the lowest score. They also scored the highest in Facilities/Events; with a score of 3. These two cities led in E-commerce. Referring to the data sheet, Brevard and Forest city recorded the highest section totals; 12.5 and 12, respectively.

E-Safety

When assessing E-safety for cities of this size, we should expect to see less emphasis than on cities with a larger population. Only 4 of 8 cities/towns had information on the office of emergency management. Bedford VA came in first with a score of 3. Brevard scored a 2, Forest City a 1, Galax VA, 1. All others scored a 0. The office of emergency management is an important feature to have on a website, but for cities that have an avg pop just a little over 6500, you would expect not too see an office of emergency mgmt tab, yet three do. Two of these cities once again are represented by WNC. No cities/towns registered a score for *Road Closures*. This is a more common practice for cities that are adjacent to highways or Interstates. From looking at the data given for the cities assessed it might not be a feasible feature for cities of this size. Brevard is the only city that registered a score higher than 1 for *Action Request/Complaints*. Brevard scored a 3 with enhanced links for sending in complaints. Once again, Brevard has a lower population than others, so here it serves as model for the other municipalities to follow.

Traffic Cams is another sub-category not feasible for towns of this size. No municipality scored in this category. Traffic cams are more feasible for larger cities, and are beneficial for high traffic interstates and highways. Personal permits are feasible for any size city. All municipalities have permits, so making them accessible online is a must. Brevard is the only city in group D where the permits are downloadable. The other cities that scored scored no higher

than 1.5. Overall, the cumulative section average for e-safety is 2.7. Only three met or exceeded this average. They are; Bedford, Brevard, and Forest City. Brevard and Forest City; the only WNC representatives ranked second and third, respectively. These two WNC towns are forerunners for E-safety, based on the towns we assessed. Mt. Caramel TN and Newport TN did not register any points for any sub-category, finishing last, among cities/towns assessed. These two towns should use the top three as a model for e-safety.

E-Business/Development

When referring to the data sheet, Zoning scored the highest of any sub-category. Three cities scored a 2 or higher. Although, 8 cities registered a score, ranging from 1-3, this category registered the most scores. GIS is right behind zoning, as they both go “hand in hand”. Of the cities that registered scores, the average was 2. So, the cities that registered a score have set a baseline that other cities should be able to follow. Zoning and GIS allow users of the website to assess current zoning ordinances, and aerial views of their community.

Business permits were utilized in two of the cities assessed. Brevard, Forest City, and Marion VA, scored a 2, 2.5 and 2, respectively. For cities of this size, we would expect not to see many downloadable forms, but surprisingly three of the cities assessed had this capability, and two of them are from WNC.

Business development for group D has a cumulative section average of 6.55. Bedford VA, Marion VA, Covington VA, Forest City NC, and Brevard NC were the only cities to meet this standard. The top scorer for this section was Bedford VA with a 13. Next are, Brevard NC and Forest City NC, score of 10.5, and 9.5; respectively. Overall, business development comes in second, behind E-commerce, among the five categories listed. This suggests that commerce and business development are the two most utilized categories for city/town websites within the populous of Group D.

Transparency/Governance

This section covers local government’s ability to create a level of transparency with citizens. Group C was rated on the following areas: *Meeting Minutes/Agenda, City or Town Code, City or Town Charter, Information access/elected officials, Video Council meetings, audio council meetings, and Strategic planning/vision*. The cumulative section average is .77. The

overall section average is 5.4. At a minimum all cities or towns should have at least one-way communication in some categories, and will score 0 in others. We hypothesize that cities of this size will more than not score in Video Council meetings or Audio council meetings.

All cities except for Galax VA, North Wilkesboro NC, and Newport TN scored a 1 or higher in meetings/minutes. This equates to 70% of the cities we assessed. With this said, the three cities that do not have their meetings available online should look at those who do, and use them as a model. At a minimum websites should at least provide information on how to access the meeting minutes, and 7 of 10 were successful.

Most of the cities assessed provided basic information on City Code and Town Charters. In order to increase transparency in local government, cities must have their Code and Charter available for the public to view, and doing this online increases transparency. Information access to elected officials was the only category in which all 10 cities registered a score. The scores range from 1-2, so all cities provide at least basic information on how to contact elected officials. The two categories that did not register any scores are, Video and Audio minutes. For cities of this size, Video and Audio minutes apparently are not feasible or viable for these cities.

Bedford VA was the only city that provided a strategic plan/vision for the future. Bedford should serve as a model for other cities. No matter what size the city is, a strategic plan should be available on the web. A mapped out plan for the future is essential for citizens to understand the direction their town is heading in. Overall, Bedford VA came in first in Transparency with a score of 14, and Transparency came in third for overall categories; with a cumulative average of 5.4. Brevard and Forest City NC were the only WNC representatives to exceed cumulative average.

E-participation/Awareness

We hypothesize that cities in group D will fall short in meeting the same expectations of group C. Group C had an overall cumulative sub-category average of 1.16. Group D has an average of .81. With this said, most all C categories were expected to meet the standard of one way communication. Cities in Group D will be “hit or miss”. Meaning some will have at least one-way communication and others will not.

All cities except for two had at least one-way communication in hours of operation. Displaying hours of operation are important for any level of local municipality. Citizens should

be able to pull up the website and find the hours of operation. Erwin TN and Mt. Caramel TN were the only two who do not have their hours of operation posted. Information requests and staff information access are the only categories in which all cities recorded a score. All cities had at least basic one-way communication for staff information and information request. The scores ranged from 1-2. These two categories and “access to elected officials”, located under

Overall, the cumulative average for the section total is 6.45. Bedford VA scored the highest with 12. Brevard and Forest City NC both came in second with a score of 11. Western North Carolina was a leader amongst E-participation. Two of the three WNC towns ranked in the top three; North Wilkesboro was the outlier as they ranked near the bottom, but overall E participation ranked high among Western North Carolina municipalities.

Best practices

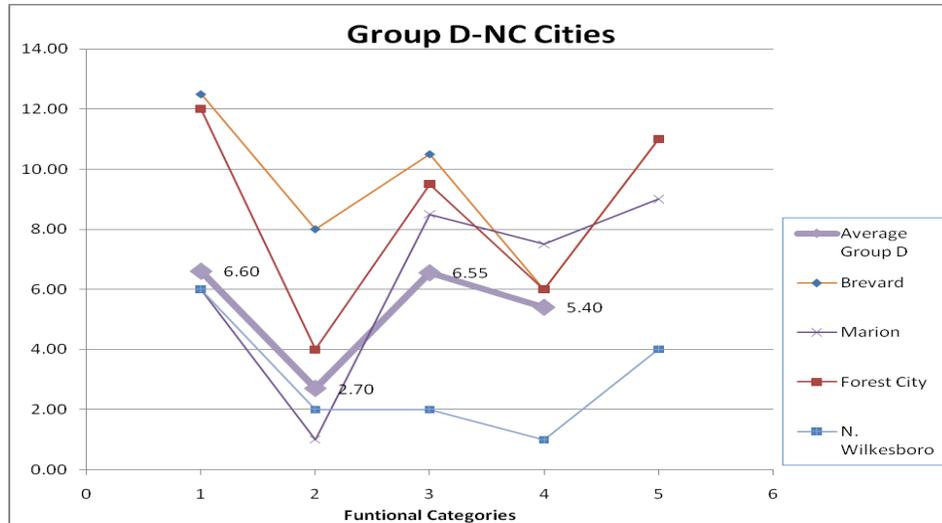
Group D websites offer many attributes that can be considered best practices, but a few stood-out above others. Brevard NC and Forest City NC, offers the best practice of the websites listed. They were the only websites that recorded a 4, and this is why they secured the overall best practice. Their website allows users to pay their utilities online. The ability to perform a transaction online is great, and the fact that it was the only city of any category to do this makes this the best overall practice. Brevard set the precedent for other cities to follow.

Conclusions

The overall section total average for Group D is 28.55. The highest scorer for Group D is Bedford VA; with a score of 54. 2nd place goes to Brevard NC, and 3rd place goes to Forest City NC, with scores of 48, and 42.5 respectively. The two highest section scores were in E-commerce and E-business/development. This is the same correlation we saw in Group C. Cities of this size must utilize their website accordingly, and these two categories are apparently the most important for cities this size. Western North Carolina has been a forerunner for these sections. Two of the three towns came in 2nd and 3rd place among the cities assessed. Brevard NC finished second overall; finished 1st in E-Commerce and E-Safety, and 2nd in Business/Development. Forest City NC also represented WNC very well. Forest City maintained 2nd and 3rd place ratings in E-participation and E-Safety; respectively. North Wilkesboro another WNC town did not finish as well as the other two. They finished 7th overall,

and have one of the lowest populations of the municipalities in Group D. Conclusively, Western North Carolina did exceptional in both Group C and D; finishing 1st in Group C and 2nd in Group D. Western North Carolina is a forerunner in E-gov, and hopefully will serve as a model for other cities to follow. Group D is displayed in aggregate by category is shown in figure 8.

Figure 8



VIII. Limitations and Conclusions

There are several limitations to this type of study as far as its empirical significance, its accurate scoring method, and anomalies in the subject municipalities. To begin, the scores of each of the sections show provision and extensiveness of services alone. If, for example, paying fines on-line is paramount to showing e-government implementation for a city while paying taxes on-line is simply superfluous, this study did not set out to rank these types of services on a graded scale. It was simply beyond the reach of this group’s knowledge and the applied research is not available to make these determinations yet. Rather, what this study did do was set a floor for services according to size in relation to similar size municipalities. All scores were then added together to give a broad cumulative section score. Researchers in the future should try to develop a way to prioritize these services as they relate to transparency, governance,

participation and so on and give higher possible scoring options to those services marked as “must-haves”.

Another issue involves lack of a scientific measurement of the data involved to show correlations between variables on sites. For example, there was not sufficient data to show a correlation between population size and mean score with statistical significance, although by examining the data artificially this seems to be the case. This study is rather a group of small case studies, morphed together to show some differences amongst municipalities. More work should be done to link the limitations and/or opportunities of local government resources, service provision, and citizen use to uncover greater understandings about how these services enable the governments to provide more quality services for the public in the long-run.

Although there was no evident intentional bias within the researchers themselves or the set-up in general, time and resources may have played a factor in some of the scoring situations. Because of the amount time spent reviewing each site was considerable, there is a chance that some scores may have been higher or lower based on the time in which they were evaluated or the ease of navigability around the websites. In addition, a “hometown” could have possibly been entered into considering all three researchers reside in Western North Carolina. In general, however, these types of biases were thought of early in the process and every attempt was made to guard against them.

IX. Implications for Public Relations

According to Mordecai Lee’s platform for public relations in government, there are eight broad functions that determine a positive relationship a government entity has with its constituents. These categories are: Media Relations, Public Reporting, Responsiveness to the Public, Increasing Utilization of Services, Public Education/Service Campaigns, Voluntary Compliance with Laws and Regulations, Using the Public as Eyes and Ears for Governmental Unit, and Increasing Public Support for Government. Much of how the functional categories for review began with this general framework.

Media relations, eyes and ears, and increasing public support were not relevant in this evaluation as the researchers determined the structure and categories of the study. However, the

e-participation section, for example was highly influenced by Lee. For example, the category of classes/activities directly relates to Lee’s Public Education and Service Campaigns. Items such as staff access, information requests, surveys and polls, and human resources procedures also demonstrate Lee’s notion of utilization of services and outreach to the public.

Public reporting was evident in the transparency and governance section, as this is where the business of the governing body and bureaucratic regime was evaluated. In both of these instances, overall the researchers were disappointed with the lack of outreach and transparency via e-government. Although there were certainly instances of enhanced participation measures and outreach, it was far less than initially imagined, particularly for the larger of the municipalities in Group A and B. On the other hand, the business of the government seemed to be enhanced greatly on-line. Voluntary compliance and some increased usage was demonstrated consistently in areas where the local governments could do a more efficient job of conducting business while perhaps increasing utilization through ease of use by citizens and businesses.

As far as responsiveness, it was clearly up and down in the study. Many municipalities gave off the impression that they wanted to hear from the citizens and would treat them as their ultimate customers. A few seemed as if the citizens were a body that would be controlled better through on-line management. In summation, it is too early to tell what innovations indeed give off the impression of outreach, responsiveness, transparency, and the like. However, by simply going to the websites of the municipalities and reviewing them in a glance, it was easy to determine which ones seemed inclusive and which ones did not.

X. Appendix

Table 1 Scoring Rubric Functional Services

E-Commerce	What types of services can citizens pay for or communicate about on-line?
Utilities	Any utilities, including water, electric, cable TV spanning from information to payment online.
Taxes	Range included providing deadlines and rates , to individualized reports to paying personal property (VA) and home property taxes on-line.
Fines	Parking tickets provided the vast majority of uses in this area.
Permits	General permits for groups requiring permission to hold parades, use public space, and hold various functions not included in personal permits or business permits.
Facilities/Events	Ranged from large municipal arenas where on-line payment may be available to smaller community centers where availability and reservations could be made on-line.

E-Safety	How does the municipality do in communicating with the public about issues regarding their personal and community safety?
Emergency Management	Involves interactive links to community safety information ranging from how-to prepare guides to personal action alerts.
Road Closures/Detours	Updated information on local roads posted, updated, and individual alerts were included.
Action Requests	Ranged from phone numbers of places to call to on-line systems that direct complaints in real-time to public safety officers.
Traffic Cams	Provide real-time access to local intersections and points of interest, chiefly downtown areas. (Note: If snapshot but not live camera provided, it received a score lower than four)
Permits-	All sorts of permits were included in this area from personal permits such as pet and individual use permits such as bike permits.
E-Business	How well is the jurisdiction using web services to promote doing business with and for the city/town and encouraging economic development?
E-procurement	Defined as the securing goods and services for use in performing city/town business functions. Low end includes information on who to call in the department, to an on-line transaction system of promoting opportunities and making complicated bids.
Property Assessment	The best scores were given to sites that provided updated, individualized information on assessments including on-line action forms.
Zoning-	Zoning maps, changes, and issues were included, as well as the more advanced interactive media for checking on and petitioning for re-zoning
Video of City/Town-	Used as an economic development tool to attract business and citizens, an interactive video received a score of four.
Codes enforcement	A multitude of city/town codes as they relate to business could be managed and communicated on the websites. Highest scores of three were attained by sites that allowed for a searchable database and opportunity for concerns/complaints (Note: No possible four scores here)
Business permits	Any type of business permit could be attained here, with those with an interactive dimension to them receiving the high score of three. (Note: No possible four scores here)
E-Transparency	How does the city or town communicate its governance role with the public?
Meeting minutes	Council minutes, agendas, and histories provided here. The highest score of three was attained by having updated, searchable databases for the public to review. (Note: No possible four scores here)
City/Town Code	If the code was provided and it was within a system that explained it, it received a two or in one instance, a three because of enhanced features. (Note: No possible four scores here)
City/Town Charter	If the charter was provided and it was within a system that explained it, it received a two or in one instance, a three because of enhanced features. (Note: No possible four scores here)
Elected officials	The level of information and communication with elected officials was examined here. The highest score went to those municipalities with quasi-interactive links to officials, including blogs and recent decisions. (Note: No possible four scores here)
Council Meetings Video	A live feed to a council meeting received a four, followed by a taped video (three), or a link to another site to view such as U-Tube (two).
Council Meetings Audio	A live feed to a council meeting received a four, followed by a taped recording (three), or a link to another site to listen (two).

Strategic Planning	If a basic plan was provided, it was given a one, followed by updated and comprehensive documents (two), and live updates and call-out boxes of changes (three). (Note: No possible four scores here)
E-Participation	How well does the municipality engage citizens and inform them about general operations and opportunities within the government entity?
Schedules/Hours of Operation	Basic hours of government offices were included as well as more interactive, updated community scheduling systems.
Document Management	The ability to navigate through city/town documents as well as search functions, and site maps were examined here. (Note: No possible four scores here)
Information Requests	Any request about general municipal government other than complaints were scored here.
Staff Access	Phone numbers, staff lists, e-mails, and even a manager blog were included here. (Note: No possible four scores here)
Classes/Programs	All community activities were examined here, with the difference in scoring having to do with the openness, inclusion, and direct linkages to the rest of the community that are updated and current receiving the highest scores. (Note: No possible four scores here)
Surveys and polls	If there was a relevant on-line poll with instant results it would have received a score of four, but none were encountered. A few sites had recent results of community surveys posted.
Job Board/Policies	Examined here was the clarity and responsiveness of the human resource department and open jobs. If it was updated and quasi-interactive, it received a three. (Note: No possible four scores here)
Job Applications	The clarity of the application and process was examined here. If there was an-online system of applying for specific jobs on-line and held applications on-line, it received a three.

Table 2 Scoring Scale

<u>Points</u>	<u>Category</u>	<u>Explanation</u>
0	Non-Existent	No information in the function area
1	Basic	One-Way information only
2	Two-Way	E-mail and basic forms
3	Enhanced	Advanced forms and links
4	Fully Developed	Online exchange and transactions

Table 3 Municipal Information (City information for NC Cities by Office of Management and Budget)

<u>Group</u>	<u>Urban Area</u>	<u>County</u>	<u>Governing Body</u>	<u>Apx. City Pop 2008</u>	<u>Apx. Cty Pop.</u>
A	Asheville	Buncombe	City of Asheville	78,000	230,000
A	Lynchburg, VA	Campbell	City of Lynchburg	67,000	53,000
A	Johnson City, TN	Carter	City of Johnson City	56,000	57,000
A	Danville, VA	Pittsylvania	City of Danville	45,000	60,000
A	Kingsport, TN	Hawkins	City of Kingsport	45,000	54,000
A	Blacksburg, VA	Montgomery	City of Blacksburg	40,000	90,000
B	Salem, VA	Roanoke	City of Salem	25,000	90,000
B	Morristown, TN	Hambleton	City of Morristown	25,000	58,000
B	Bristol, TN	Sullivan	City of Bristol	24,000	150,000
B	Lenoir	Caldwell	City of Lenoir	19,000	80,000
B	Morganton	Burke	City of Morganton	17,000	90,000
B	Bristol, VA	Washington	City of Bristol	17,000	53,000
B	Greeneville, VA	Greene	Towne of Greene	16,000	60,000
B	Radford, VA	Pulaski	City of Radford	16,000	35,000
B	Martinsville, VA	Henry	City of Martinsville	15,000	55,000
B	Boone	Watauga	City of Boone	15,000	45,000
B	Elizabethton, TN	Carter	City of Elizabethton	14,000	57,000
B	Hendersonville	Henderson	City of Hendersonville	13,000	100,000
C	Sevierville, TN	Sevier	City of Sevierville	12,000	72,000
C	Sylva	Jackson	Town of Sylva* (plus Cullowhee and surrounding area)	10,000	36,000
C	Waynesville	Haywood	Town of Waynesville	10,000	56,000
C	Black Mountain	Buncombe	Town of Black Mountain	9,000	230,000
C	Alcoa, TN	Blount	City of Alcoa	8,000	105,000
C	Jefferson City, TN	Jefferson	City of Jefferson City	8,000	45,000
D	Forest City	Rutherford	Town of Forest City	7,000	65,000
D	Newport, TN	Cocke	City of Newport	7,000	35,000
D	Brevard	Transylvania	City of Brevard	7,000	30,000
D	Galax, VA	Grayson	City of Galax	7,000	16,000
D	Marion	Smyth	Town of Marion	7,000	32,000
D	Bedford, VA	Bedfor	City of Bedford	6,000	66,000
D	Erwin, TN	Unicoi	Town of Erwin	6,000	18,000
D	Covington, VA	Allegheny	City of Covington	6,000	17,000
D	N. Wilkesboro	Wilkes	Town of N. Wilkesboro	5,000	68,000
D	Mount Carmel, VA	Hawkins	Town of Mt. Carmel	5,000	54,000

Table 4 Scoring Rubric Consolidated Scores

Western NC E-Gov Project		E-Commerce						E-Safety					
Scoring Scale 1. One way communicat. 2. Basic E-mail/contact 3. Enhanced-Forms/links 4. Exchange online		Utilities	Taxes	Fines	Permits	Facilities/Events	Section total	Emergency Mgt.	Road Closures	Action requests	Traffic cams	Personal permits	Section total
A	Lynchburg	4.00	4.00	4.00	2.00	2.00	16.00	4.00	1.00	2.00	4.00	3.50	14.50
A	Asheville	4.00	0.00	4.00	4.00	3.50	15.50	3.00	3.00	2.50	0.00	3.00	11.50
A	Danville	1.50	1.00	1.50	2.50	1.00	7.50	2.00	0.00	2.00	0.00	1.00	5.00
A	Johnson City	4.00	4.00	1.00	1.00	4.00	14.00	3.00	0.00	0.00	0.00	2.00	5.00
A	Kingsport	0.00	1.00	3.00	2.00	2.50	8.50	0.00	0.00	2.00	0.00	2.00	4.00
A	Average Group A	2.70	2.00	2.70	2.30	2.60	12.30	2.40	0.80	1.70	0.80	2.30	8.00
B	Bristol, TN	2.50	2.00	2.00	2.50	3.00	12.00	1.00	1.00	4.00	4.00	4.00	14.00
B	Blacksburg	4.00	4.00	4.00	3.50	3.50	19.00	1.00	1.00	1.50	4.00	2.00	9.50
B	Martinsville	4.00	3.00	2.00	1.00	2.50	12.50	1.50	1.00	2.00	0.00	2.50	7.00
B	Boone	1.00	0.00	0.00	4.00	4.00	9.00	0.00	0.00	4.00	0.00	4.00	8.00
B	Salem	1.50	2.50	1.50	2.50	3.50	11.50	1.00	2.00	1.00	2.00	2.00	8.00
B	Morristown	1.00	4.00	1.00	2.50	2.50	11.00	1.00	1.00	3.50	1.50	2.00	9.00
B	Bristol, VA	1.50	2.50	1.50	2.00	2.50	10.00	1.00	1.00	3.00	2.00	2.50	9.50
B	Radford	1.50	2.00	1.50	1.00	1.50	7.50	1.50	1.00	2.00	0.00	2.00	6.50
B	Morganton	3.50	3.50	2.50	2.50	2.50	14.50	2.00	0.00	1.00	0.00	2.00	5.00
B	Lenoir	1.00	0.00	0.00	3.00	1.00	5.00	0.00	0.00	0.00	0.00	3.00	3.00
B	Hendersonville	1.00	1.00	1.00	1.00	1.00	5.00	1.00	0.00	1.50	0.00	1.00	3.50
B	Elizabethton	1.00	1.00	1.00	2.00	1.00	6.00	1.00	0.00	1.00	0.00	2.00	4.00
B	Greeneville	1.00	0.00	0.00	0.00	1.50	2.50	0.00	0.00	1.00	0.00	1.00	2.00
B	Average Group B	1.88	1.96	1.38	2.12	2.31	9.65	0.92	0.62	1.96	1.04	2.31	6.85
C	Waynesville	4.00	3.00	0.00	3.00	2.00	12.00	0.00	0.00	3.00	0.00	3.00	6.00
C	Black Mountain	1.00	1.00	1.00	1.50	2.50	7.00	1.00	1.00	3.00	0.00	1.00	6.00
C	Alcoa	2.00	2.00	1.00	2.00	2.00	9.00	0.00	0.00	2.00	0.00	2.00	4.00
C	Sylva	0.00	3.00	0.00	2.00	2.00	7.00	0.00	0.00	3.00	3.00	0.00	6.00
C	Jefferson City	1.00	1.00	1.00	1.00	1.00	5.00	0.00	0.00	1.50	0.00	1.00	2.50
C	Sevierville	1.50	2.00	2.00	0.00	1.00	6.50	0.00	0.00	0.00	0.00	0.00	0.00
C	Average Group C	1.58	2.00	0.83	1.58	1.75	7.75	0.17	0.17	2.08	0.50	1.17	4.08
D	Bedford	2.00	2.00	2.00	1.00	3.00	10.00	3.00	0.00	1.00	0.00	1.00	5.00
D	Brevard	3.50	1.50	2.00	3.00	2.50	12.50	2.00	0.00	3.00	0.00	3.00	8.00
D	Forest City	4.00	2.00	0.00	3.00	3.00	12.00	1.00	0.00	1.00	0.00	2.00	4.00
D	Covington	2.50	1.00	1.00	0.00	1.00	5.50	0.00	0.00	1.00	0.00	1.50	2.50
D	Marion	1.00	1.00	1.00	1.00	2.00	6.00	0.00	0.00	1.00	0.00	0.00	1.00
D	Galax	1.50	1.00	0.00	1.00	2.00	5.50	1.00	0.00	0.00	0.00	1.00	2.00
D	Erwin	1.50	1.00	0.00	1.50	0.00	4.00	0.00	0.00	1.00	0.00	1.50	2.50
D	N. Wilkesboro	1.00	1.00	1.00	1.00	2.00	6.00	0.00	0.00	1.00	0.00	1.00	2.00
D	Newport	0.00	0.00	0.00	1.00	1.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
D	Mount Carmel	1.00	0.00	0.00	0.00	1.50	2.50	0.00	0.00	0.00	0.00	0.00	0.00
D	Average Group D	1.80	1.05	0.70	1.25	1.80	6.60	0.70	0.00	0.90	0.00	1.10	2.70
	Cumulative Average (34)	1.97	1.78	1.32	1.87	2.21	9.15	0.97	0.44	1.66	0.66	1.81	5.54

Continued

Western NC E-Gov Project		E-Business/Dev							
Scoring Scale 1-One way communicat. 2. Basic-E-mail/contact 3. Enhanced-Forms/links 4. Exchange online		E-procurement	Property Assess	Zoning	GIS	Video of town	Code enforcement	Business permits	Section total
A	Lynchburg	4.00	2.50	2.50	4.00	3.50	2.00	2.50	21.00
A	Asheville	2.00	0.00	3.50	4.00	3.00	2.00	3.00	17.50
A	Danville	1.50	1.50	2.50	2.50	4.00	1.00	1.50	14.50
A	Johnson City	1.00	2.50	2.00	1.00	1.00	1.00	1.00	9.50
A	Kingsport	1.00	1.00	2.50	3.00	2.50	1.50	1.00	12.50
A	Average Group A	1.90	1.50	2.60	2.90	2.80	1.50	1.80	15.00
B	Bristol, TN	1.00	4.00	2.50	1.50	3.50	3.00	3.00	18.50
B	Blacksburg	2.50	1.50	2.00	3.50	0.00	2.00	2.00	13.50
B	Martinsville	2.50	1.00	2.50	4.00	0.00	2.00	2.50	14.50
B	Boone	2.00	0.00	1.00	3.00	4.00	3.00	3.00	16.00
B	Salem	1.50	2.00	1.50	3.50	0.00	1.50	2.00	12.00
B	Morristown	1.00	2.00	2.00	2.00	2.50	2.00	2.00	13.50
B	Bristol, VA	1.00	2.50	2.50	1.00	0.00	1.50	1.00	9.50
B	Radford	1.50	1.00	1.50	3.00	2.00	1.50	1.50	12.00
B	Morgantown	1.00	1.00	1.50	0.00	1.50	1.50	1.50	8.00
B	Lenoir	0.00	0.00	3.00	3.00	0.00	3.00	3.00	12.00
B	Hendersonville	1.00	1.00	3.00	1.00	0.00	1.00	1.00	8.00
B	Elizabethton	1.00	1.00	2.00	0.00	0.00	1.00	2.00	7.00
B	Greeneville	1.00	1.00	1.00	0.00	0.00	1.00	1.00	5.00
B	Average Group B	1.31	1.38	2.00	1.96	1.04	1.85	1.96	11.50
C	Waynesville	2.00	2.00	3.00	0.00	2.00	3.00	3.00	15.00
C	Black Mountain	0.00	0.00	3.00	1.00	1.50	1.50	2.00	9.00
C	Alcoa	2.00	2.00	2.00	1.00	1.00	2.00	2.00	12.00
C	Sylva	1.00	0.00	3.00	0.00	3.00	2.00	2.00	11.00
C	Jefferson City	1.00	1.00	1.00	3.50	1.00	1.50	1.00	10.00
C	Sevierville	1.50	1.50	2.00	1.00	0.00	0.00	0.00	6.00
C	Average Group C	1.25	1.08	2.33	1.08	1.42	1.67	1.67	10.50
D	Bedford	0.00	3.00	3.00	3.00	0.00	3.00	1.00	13.00
D	Brevard	1.00	1.50	2.00	1.50	1.50	1.00	2.00	10.50
D	Forest City	1.00	0.00	2.50	1.00	1.00	1.50	2.50	9.50
D	Covington	1.00	0.00	2.50	3.50	1.50	1.50	1.50	11.50
D	Marion	1.50	1.00	2.00	1.50	0.00	1.00	1.50	8.50
D	Galax	1.00	0.00	1.00	0.00	0.00	0.00	1.00	3.00
D	Erwin	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00
D	N. Wilkesboro	1.00	0.00	0.00	0.00	0.00	0.00	1.00	2.00
D	Newport	0.00	0.00	1.00	0.00	1.50	1.00	0.00	3.50
D	Mount Carmel	0.00	0.00	1.00	1.00	0.00	1.00	0.00	3.00
D	Average Group D	0.65	0.55	1.50	1.15	0.55	1.00	1.15	6.55
	Cumulative Average (34)	1.24	1.16	2.04	1.81	1.22	1.56	1.71	10.74

Western NC E-Gov Project		E-Transparency							
	Scoring Scale 1-One way communicat. mail/contact Forms/links 2. Basic-E-mail/contact 3. Enhanced-Forms/links 4. Exchange online	Meeting minutes	City or town code	City or town charter	Access elected officials	Video council meet	Audio Council meet	strategic planning	Section total
A	Lynchburg	2.00	2.00	2.00	2.50	3.50	3.50	2.50	18.00
A	Asheville	3.00	1.00	0.00	2.00	3.50	0.00	2.00	11.50
A	Danville	2.00	1.00	0.00	2.00	4.00	4.00	2.50	15.50
A	Johnson City	1.50	1.50	1.50	2.50	0.00	0.00	2.00	9.00
A	Kingsport	1.00	1.00	1.00	1.50	0.00	0.00	1.50	6.00
A	Average Group A	1.90	1.30	0.90	2.10	2.20	1.50	2.10	12.00
B	Bristol, TN	2.50	2.00	2.50	3.00	3.50	3.50	1.00	18.00
B	Blacksburg	2.50	2.50	1.50	2.00	4.00	4.00	3.00	19.50
B	Martinsville	2.00	2.50	1.00	2.00	0.00	0.00	2.50	10.00
B	Boone	2.00	2.00	2.00	3.00	0.00	0.00	1.00	10.00
B	Salem	1.50	2.00	1.50	2.50	0.00	0.00	2.50	10.00
B	Morristown	1.50	1.50	1.50	1.50	0.00	0.00	1.00	7.00
B	Bristol, VA	1.00	2.00	1.50	2.00	0.00	0.00	2.00	8.50
B	Radford	1.50	2.00	1.00	2.00	0.00	0.00	1.50	8.00
B	Morganton	2.50	0.00	0.00	1.50	0.00	0.00	2.00	6.00
B	Lenoir	1.00	1.00	0.00	3.00	0.00	0.00	0.00	5.00
B	Hendersonville	1.50	1.00	1.00	1.50	0.00	0.00	1.50	6.50
B	Elizabethton	0.00	1.50	1.00	1.00	0.00	0.00	0.00	3.50
B	Greeneville	1.00	1.00	1.50	1.00	0.00	0.00	0.00	4.50
B	Average Group B	1.58	1.62	1.23	2.00	0.58	0.58	1.38	8.96
C	Waynesville	3.00	2.00	0.00	2.00	0.00	0.00	0.00	7.00
C	Black Mountain	3.00	1.00	1.00	1.50	2.00	2.00	2.00	12.50
C	Alcoa	2.00	2.00	2.00	2.00	0.00	0.00	1.50	9.50
C	Sylva	3.00	2.00	0.00	3.00	0.00	0.00	0.00	8.00
C	Jefferson City	1.50	2.00	1.00	2.00	0.00	0.00	0.00	6.50
C	Sevierville	2.50	1.00	1.50	2.00	0.00	0.00	1.00	8.00
C	Average Group C	2.50	1.67	0.92	2.08	0.33	0.33	0.75	8.58
D	Bedford	3.00	3.00	3.00	2.00	0.00	0.00	3.00	14.00
D	Brevard	2.00	1.50	0.00	1.50	0.00	0.00	1.00	6.00
D	Forest City	2.00	1.00	0.00	2.00	0.00	0.00	1.00	6.00
D	Covington	1.50	1.50	1.50	1.50	0.00	0.00	1.50	7.50
D	Marion	2.50	2.50	1.00	1.50	0.00	0.00	0.00	7.50
D	Galax	0.00	0.00	0.00	1.50	0.00	0.00	0.00	1.50
D	Erwin	1.00	1.00	1.00	2.00	0.00	0.00	0.00	5.00
D	N. Wilkesboro	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
D	Newport	0.00	0.00	0.00	2.50	0.00	0.00	1.00	3.50
D	Mount Carmel	1.00	0.00	0.00	1.00	0.00	0.00	0.00	2.00
D	Average Group D	1.30	1.05	0.65	1.65	0.00	0.00	0.75	5.40
	Cumulative Average (34)	1.75	1.47	1.00	2.00	0.60	0.50	1.26	8.59

Western NC E-Gov Project		E-Participation-Awareness										
	Scoring Scale 1-One way communicat. 2. Basic-E-mail/contact 3. Enhanced-Forms/links 4. Exchange online	Schedules/hours	Document mgt.	Information request	Staff access	Classes/Programs	E-meetings	Surveys and polls	Job board/policies	Job applications	Section total	Overall total
A	Lynchburg	3.50	2.00	2.50	2.50	2.00	1.00	1.00	2.50	2.00	19.00	88.50
A	Asheville	2.00	0.00	2.50	2.00	2.50	0.00	0.00	0.00	1.50	10.50	66.50
A	Danville	2.00	2.00	1.50	2.00	2.00	0.00	0.00	1.00	1.50	12.00	54.50
A	Johnson City	1.50	1.00	1.00	2.00	2.00	0.00	0.00	2.00	1.50	11.00	48.50
A	Kingsport	1.00	1.50	1.50	1.50	2.50	0.00	0.00	1.50	1.50	11.00	42.00
A	Average Group A	2.00	1.30	1.80	2.00	2.20	0.20	0.20	1.40	1.60	12.70	60.00
B	Bristol, TN	2.00	1.50	3.50	2.00	1.50	0.00	2.50	1.50	1.50	16.00	78.50
B	Blacksburg	2.00	3.00	1.00	2.00	2.00	1.00	0.00	2.00	2.00	15.00	76.50
B	Martinsville	2.00	2.00	2.50	2.50	1.00	0.00	0.00	2.00	2.50	14.50	58.50
B	Boone	1.00	1.00	4.00	3.00	1.00	0.00	0.00	2.00	2.00	14.00	57.00
B	Salem	2.00	2.00	2.00	2.00	2.00	0.00	0.00	1.50	1.50	13.00	54.50
B	Morristown	1.50	1.00	2.50	2.00	1.00	0.00	0.00	1.50	1.50	11.00	51.50
B	Bristol, VA	1.00	1.50	2.00	2.00	1.00	0.00	0.00	1.50	2.00	11.00	48.50
B	Radford	1.50	2.00	2.00	1.50	1.00	0.00	0.00	2.50	2.50	13.00	47.00
B	Morganton	1.00	1.00	1.50	2.00	1.00	0.00	1.00	1.00	1.50	10.00	43.50
B	Lenoir	2.00	0.00	1.00	3.00	0.00	0.00	0.00	2.00	2.00	10.00	35.00
B	Hendersonville	1.00	2.50	1.50	2.50	1.00	0.00	0.00	1.50	1.50	11.50	34.50
B	Elizabethton	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	5.00	25.50
B	Greeneville	1.00	1.00	1.00	2.00	1.00	0.00	0.00	1.50	1.50	9.00	23.00
B	Average Group B	1.46	1.50	1.96	2.12	1.12	0.08	0.27	1.58	1.69	11.77	48.73
C	Waynesville	1.00	0.00	3.00	2.00	0.00	0.00	2.00	2.00	2.00	12.00	52.00
C	Black Mountain	1.00	2.00	2.00	2.00	0.00	1.00	1.00	2.00	2.00	13.00	47.50
C	Alcoa	1.50	0.00	2.00	2.00	0.00	0.00	0.00	2.00	2.00	9.50	44.00
C	Sylva	1.00	0.00	3.00	2.00	0.00	0.00	2.00	0.00	2.00	10.00	42.00
C	Jefferson City	1.00	0.00	2.00	2.00	1.00	0.00	0.00	1.50	1.50	9.00	33.00
C	Sevierville	1.50	1.00	2.00	2.00	1.00	0.00	0.00	1.00	1.00	9.50	30.00
C	Average Group C	1.17	0.50	2.33	2.00	0.33	0.17	0.83	1.42	1.75	10.50	41.42
D	Bedford	1.00	3.00	2.00	2.00	0.00	0.00	0.00	2.00	2.00	12.00	54.00
D	Brevard	1.00	1.00	2.00	1.50	0.00	0.00	1.50	2.00	2.00	11.00	48.00
D	Forest City	1.50	1.00	2.00	2.00	0.00	0.00	0.00	2.00	2.50	11.00	42.50
D	Covington	1.00	1.50	2.00	1.00	0.00	0.00	0.00	1.00	0.00	6.50	33.50
D	Marion	1.00	1.50	1.50	1.50	0.00	0.00	0.00	1.00	2.50	9.00	32.00
D	Galax	1.00	1.00	2.50	1.00	0.00	0.00	0.00	2.50	2.00	10.00	22.00
D	Erwin	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	3.00	15.50
D	N. Wilkesboro	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	4.00	15.00
D	Newport	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	1.50	4.50	13.50
D	Mount Carmel	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	2.00	9.50
D	Average Group D	0.00	0.90	1.60	1.30	0.00	0.00	0.15	1.05	1.45	6.45	28.55
	Cumulative Average (34)	1.37	1.18	1.96	1.90	0.87	0.09	0.32	1.41	1.66	10.75	44.76

Addendum

Since our report was been shared with local municipalities, we have received quite a bit of feedback about its results. We welcome the dialogue that it has created and hope it serves as a discussion piece for future planning efforts. To that end, we have been given several important issues to consider regarding our design and analysis. Those issues are explained below. The additions will not show up in the original paper because we have chosen to keep the original work intact. However, they are important to consider.

- 1. Town charters are included in the ordinances section of many municipalities using on-line management software . Our reviewers may have missed this point and graded in the E-transparency section incorrectly. This would result in an additional four points in that section for towns such as Waynesville and cities such as Asheville. We certainly apologize for that mistake and hope you will add that to your individual scores.*
- 2. The issue of searchable websites and on-line document management was brought to our attention. Should the ability to search on-line and having an on-line document management system different? In some cases yes. The score in this category was indicative of having a search function for the consumer, and the ease and ability within which the lay person can find appropriate resources. It was cored based on this criterion, not whether or not the municipality has an on-line document management system. Perhaps the category could have been better renamed “navigatibility”.*
- 3. Often small towns do not have offices of emergency management. This function is led by the county in many situations. Therefore, the cities who do have this type of partnership may have been ineligible for scores in this category. Further researchers should examine this topic to examine the appropriateness of services such these based on municipality size and what educational marketing links would be necessary to have at the town/city level.*
- 4. Several comments were made about many services being cost prohibitive. This was a major reason behind the classification of municipalities by size. If town have similar size budgets, for example, they should be providing similar types of services. We understand that some of these services would not be available in all municipalities. Again further research could examine which services are truly core to effective governance and which may be supplementary.*