2009

Final Report: Residents' opinions about the expressway, Super 7

Executive Summary

The objective of this study aimed to understand and evaluate local Connecticut resident's opinions on the Super 7 expressway. An online survey was used in this study to examine resident's opinions regarding the expressway expansion. The study population was based upon geographical units. The individual towns surrounding the proposed Super 7 Expressway constituted the study population.

The study employed two sampling approaches. A stratified, systematic sampling with Probability Proportionate to Size (PPS) method was used to identify a sampling fraction in each of the strata that was proportional to that of the total study population. Snowball sampling approach was used as the alternative sampling approach. This study used recruitment materials. Specifically, invitation letters, online announcements, e-mails, and face to face communication were used. As a result, 486 residents completed the survey for this study.

Descriptive statistics, *ANOVA*, and *MANCOVA* were used to analyze the data. The results suggest:

1. Among 486 respondents, 53% of them supported the Super 7 Expressway, 6% of them opposed the Super 7 Expressway, 28% of them had a neutral position, and 13% of them did not know about their positions.

2. Residents in Ridgefield had the lowest level of support for the Super 7 Expressway, whereas residents in Danbury had the strongest support for the Super 7 Expressway. In general, Danbury, Bethel, Westport, and Norwalk have more supporters for the Super 7 Expressway than Ridgefield and New Canaan. Residents in Ridgefield perceived the lowest level of importance of the Super 7 Expressway, whereas residents in Danbury perceived the highest importance of the Super 7 Expressway.

3. Among 486 respondents, 27% of them will use the Super 7 Expressway for recreational purpose, 21% of them will use the Super 7 Expressway for work purpose, and 17% of them will use the Super 7 Expressway for shopping purpose.

4. Five variables were found to influence how residents feel about the Super 7 Expressway. The results suggest:

    a. Male residents support the Super 7 Expressway more than female residents.
    b. The more residents are familiar with the current RT-7 and the Super 7 Expressway, the more they will support the Super 7 Expressway.
    c. The more residents are familiar with driving on the current RT-7, the more they believe that the Super 7 Expressway will impact their communities positively.
    d. The more residents are familiar with the Super 7 Expressway, the more they believe that the Super 7 Expressway is important to them, will impact their communities positively, and benefit them individually.
    e. The more income residents earn, the more they will support the Super 7 Expressway and believe that the Super 7 Expressway is important to them and will benefit them individually.

Study Objective

The objective of this study was to determine if the current RT-7 should continue to be expanded. In other words, this study aimed to understand and evaluate local Connecticut resident's opinions regarding the Super 7 expressway.

Research Questions

1. Do residents support or oppose expanding the current RT-7 from the current end in Norwalk, up through Danbury?
2. How do residents who live in surrounding areas feel about the Super 7 Expressway?
3. Are there any significant demographics that influence how residents feel about the Super 7 Expressway?

Study Design and Methodology

An online survey (see Appendix A) was used in this study to examine resident's opinions regarding the expressway expansion. The survey itself was anonymous. The questions were mainly consisted of open-ended and scale questions. The survey consisted of three parts. The first part examines how familiar residents are with the current RT-7 and the expansion of the current RT-7 and their opinions toward the expansion (Q2-Q9). The second part examines the experiences residents have with the current RT-7 and the expectations residents have toward the expansion of the current RT-7 (Q10-Q16). These questions ask things such as how often residents travel along the current RT-7 or what the main purpose is for residents to use the current RT-7 and the possible expansion. The final part of the questionnaire asks demographic questions regarding the residents (Q17-Q24).

Study Population

The study population was based upon geographical units. Specifically, the individual towns surrounding the proposed Super 7 Expressway constituted the study population. It is important to consider these communities because the residents who live around the current route and near the possible route expansion will be greatly affected. These segments include both males, females, and various types of ethnicity and age range.

Sampling

The study employed two sampling approaches including both probability and nonprobability sampling. At the beginning, a stratified, systematic sampling with a random start was used as the main method of grouping the study population into homogenous groups. In particular, Probability Proportionate to Size (PPS) method was used for the grouping that aimed to identify a sampling fraction in each of the strata that was proportional to that of the total study population. Table 1 demonstrates the composition of the study population with 10 counties stratified in the study population.

Table 1: Study Population

City	Population	%	Sampling frame	Sampling target
Bethel	18,481	5.97	60	30
Danbury	78,939	25.52	255	128
Darien	20,209	6.53	65	33
New Canaan	19,691	6.37	64	32
Norwalk	84,877	27.44	274	137
Redding	9,365	3.03	30	15
Ridgefield	24,031	7.77	78	39
Weston	10,083	3.26	33	16
Westport	25,749	8.32	83	42
Wilton	17,924	5.79	58	29
Total	309,349	100	1000	500

Based on PPS method, a sampling frame with 1000 mailing addresses was created. Recruitment materials were sent to 500 residents. The study received 23 responses form 500 direct contacts, which yielded about 4.6% response rate. Due to a very low response rate, the study then employed an alternative sampling approach. Snowball sampling, one of the nonprobability sampling approaches, was used as the alternative sampling approach. This approach collects data on members of the target population that can be located, and then asks them to help locate other members of that population. In this case, this study used referral from residents at the targeted regions identified in this study. For this method, the response rate cannot be calculated. As a result, 463 additional responses were collected, which yielded 486 responses in total for this study.

Table 2: Respondents' Residency

City	Population	%	Respondents' residency	%
Bethel	18,481	5.97	26	5.3
Danbury	78,939	25.52	100	20.6
Darien	20,209	6.53	38	7.8
New Canaan	19,691	6.37	30	6.2
Norwalk	84,877	27.44	164	33.7
Redding	9,365	3.03	16	3.3
Ridgefield	24,031	7.77	32	6.6
Weston	10,083	3.26	16	3.3
Westport	25,749	8.32	32	6.6
Wilton	17,924	5.79	32	6.6
Total	309,349	100	486	100.0

Table 2 documents the distributions of respondents' residency. By comparisons, the distributions are closely reflective to the study population. The noticeable differences are the distributions of respondents in Danbury and Norwalk. The study had more expected responses from residents in Norwalk (27% vs. 34%) and less expected responses from residents in Danbury (26% vs. 21%).

Recruitment and Study Procedure

This study used recruitment materials. For the first type of the sampling approaches used in this study, this study used direct mails to recruit respondents. For the second type of the sampling approaches used in this study, invitation letters, online announcements, e-mails, and face to face communication were used.

In each direct mail, an invitation letter (see Appendix B) with a webpage address was sent to inform residents of this research study. Residents who were interested in taking part in this study went to the designated webpage (http://www.stamford.uconn.edu/super7.html). This designated webpage instructed respondents to click on the information sheet link. This step gave them an opportunity to learn more about this study. At that point, respondents had a chance to decide whether they would like to participate in this study or not. Willing residents then started to answer questions by clicking on the survey link. Residents keyed in a randomly assigned ID from the invitation letter at the beginning of the study to enter a prize drawing.

Data analysis

Descriptive statistics, *ANOVA*, and *MANCOVA* were used to analyze the data. First, descriptive statistics including frequency tables and cross tabulations were used to describe the characteristics of respondents and the relations among variables. Then, *ANOVA* tests were conducted to determine whether between-group differences such as demographics could reasonably have occurred and whether they could represent a genuine relationship between the variables examined. Finally, *MANCOVA* tests were conducted to test several demographic variables such as gender to see if demographics are factors influencing opinions about the expressway expansion. An advantage of this procedure is that the sets of dependent variables are considered simultaneously. That is, the test of *MANCOVA* considers the correlations among the set of dependent variables while controlling several demographic variables.

Results

1. Descriptive statistics

Among 486 respondents, 85% of them have used the current RT-7 before, whereas 15% of them have never used it. 60% of them have travelled along the current RT-7 at least a few times a month. Table 3 reveals that 28% of the residents have used the current RT-7 for recreational purpose, 18% of them have used the current RT-7 for work purpose, and 16% of them have used the current RT-7 for shopping purpose. These are the three main purposes of travel on the current RT-7.

Table 3: The Main Purpose of Travel on RT-7

Purpose	Frequency	%
Business	44	9.1
Recreational uses	136	28
School related	41	8.4
Shopping	79	16.3
Work	88	18.1
Never use it	70	14.4
Others	28	5.8
Total	486	100

Table 4 documents the ethnic background of respondents. The majority of respondents were Caucasian (76%), whereas the second largest ethnic group in this study was Hispanic (8%). Among the 486 respondents, 56% of them were females and 44% of them were males. The youngest respondent was 16 years old, whereas the oldest respondent was 88 years old. The average age was 28.45 years old (SD = 13.16). Most of respondents resided in suburban areas (76%) and 17% of them lived in urban areas. In terms of income, 48% of respondents earned less than $25,000 a year and 22% of them earned between $25,001 and $49,999 a year. While 13% of respondents earned between $50,000 and $75000 a year, 17% of them earned more than $75001 a year. In terms of transportation, 94% of respondents had a car to drive around.

Table 4: Respondents' Ethnic Background

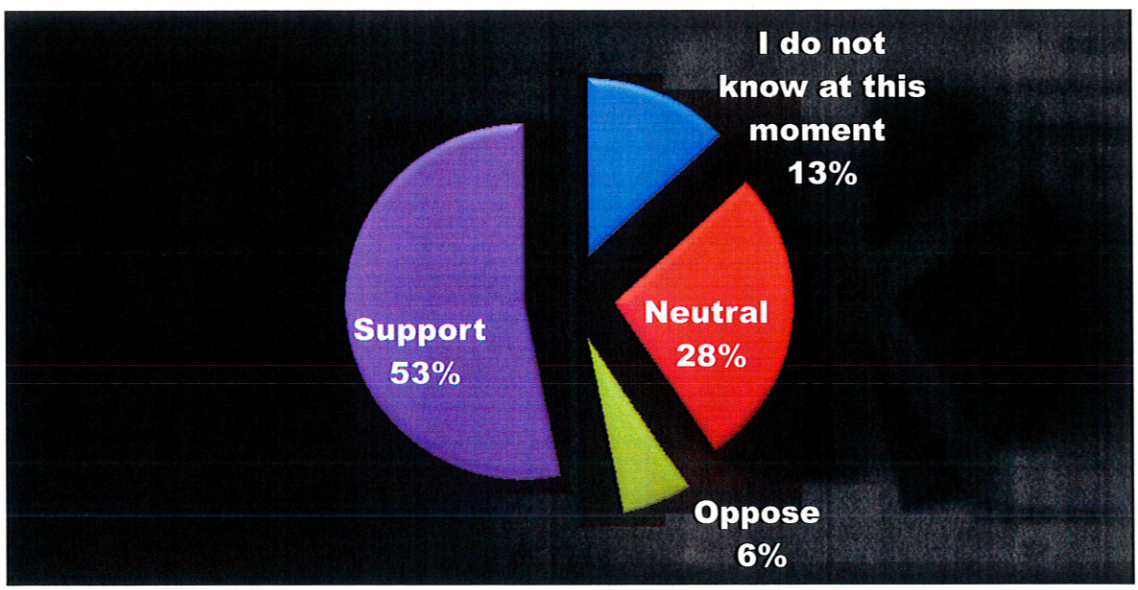
Ethnic	Frequency	%
African American	28	5.8
Asian	31	6.4
Caucasian	371	76.3
Hispanic	37	7.6
Middle Eastern	3	.6
Native American	4	.8
Other, please specify	12	2.5
Total	486	100

Table 5 documents the descriptive statistics for the scale questions measured in this study. In general, residents were familiar with the current RT-7 (M = 6.06, SD = 2.41) and driving on the current RT-7 (M = 5.94, SD = 2.41). Although residents were not extremely familiar with the Super 7 Expressway (M = 4.5, SD = 2.71), they seemed to favor the Super 7 Expressway (M = 5.06, SD = 1.61). Figure 1 further demonstrates the results based on a nominal measure asking positions on the Super 7 Expressway. Figure 1 shows that 53% of respondents supported the Super 7 Expressway, while 6% of them opposed the Super 7 Expressway. However, 28% of respondents had a neutral position and 13% of them did not know about their positions. Residents believe that the Super 7 Expressway can benefit them (M = 5, SD = 1.4), impact the community positively (M = 4.87, SD = 1.5), and is important to them (M = 4.65, SD = 1.62). These results seem to confirm supportive position toward the Super 7 Expressway.

Table 5: Descriptive Statistics

Variables	Range	Minimum	Maximum	Mean	Standard Deviation
How familiar are you with the current RT-7?	7	1	8	6.06	2.405
How familiar are you with driving on the current RT-7?	7	1	8	5.94	2.407
How familiar are you with the idea of the Super 7 Expressway?	7	1	8	4.50	2.705
On a scale of 1 to 7, would you support or oppose the Super 7 Expressway?	6	1	7	5.06	1.614
On a scale of 1 to 7, how much would the Super 7 Expressway benefit you in general?	6	1	7	5.00	1.400
On a scale of 1 to 7, how much would the Super 7 Expressway impact your community in general?	6	1	7	4.87	1.501
On a scale of 1 to 7, how important is it to you in general that the Super 7 Expressway occurs in the future?	6	1	7	4.65	1.620

Figure 1: Respondents' Positions on the Super 7 Expressway



Finally, Table 6 reveals the main purpose of travel on the Super 7 Expressway if it is accessible to them. Similar to the results in Table 3, 27% of the residents will use the Super 7 Expressway for recreational purpose, 21% of them will use the Super 7 Expressway for work purpose, and 17% of them will use the Super 7 Expressway for shopping purpose. Consistently, these are the same three main purposes of travel on the current RT-7.

Table 6: The Main Purpose of Travel on the Super 7 Expressway

Purpose	Frequency	%
I have no intention to use the Super 7 Expressway	70	14.4
Business	41	8.4
Recreational uses	131	27
School related	38	7.8
Shopping	82	16.9
Work	100	20.6
Others	24	4.9
Total	486	100

2. *ANOVA* Tests

One of the research questions aims to examine whether there are any significant demographics that influence how residents feel about the Super 7 Expressway. Residency was found to be an important variable that could influence how residents feel about the Super 7 Expressway, F (9, 476) = 2.373, $p < .012$. Based on *ANOVA* tests, Table 7 documents the significant differences among positions on the Super 7 Expressway.

Table 7: Differences among Positions on the Super 7 Expressway

On a scale of 1 to 7, would you support or oppose the Super 7 Expressway?	N	Mean	Standard Deviation	Mean Differences				
Bethel	26	5.42	1.362	b*	a			
Danbury	100	5.43	1.559	b*		a		
Darien	38	4.74	1.913			b*		
New Canaan	30	4.50	1.570		b*	b*		b*
Norwalk	164	5.09	1.560	b*			a	
Redding	16	4.94	1.237					
Ridgefield	32	4.31	1.991	a	b*	b*	b*	b*
Weston	16	5.31	1.250	b*				
Westport	32	5.34	1.285	b*				a
Wilton	32	4.81	1.786					
Total	486	5.06	1.614					

Note. Column: Means that do not share a common subscript significantly differ, *<.05, **< .001.

The results revealed that residents in Ridgefield had the lowest level of support for the Super 7 Expressway (M = 4.31, SD = 2). Residents in Ridgefield showed statistically weaker support for the Super 7 Expressway than residents in Bethel (p = .009), Danbury (p = .001), Norwalk (p = .012), Weston (p = .041), and Westport (p = .01). Residents in Danbury had the strongest support for the Super 7 Expressway (M = 5.43, SD = 1.56). In addition, they showed statistically stronger support for the Super 7 Expressway than residents in Darien (p = .023), New Canaan (p = .005), and Ridgefield (p = .001). In general, Danbury, Bethel (M = 5.42, SD = 1.36), Westport (M = 5.34, SD = 1.29), and Norwalk (M = 5.09, SD = 1.56) have more supporters for the Super 7 Expressway than Ridgefield and New Canaan (M = 4.5, SD = 1.57).

To explain the findings in Table 7, perceived importance of the Super 7 Expressway was found to be different among the residents, F (9, 476) = 2.81, p < .003. Based on *ANOVA* tests, Table 8 documents the significant differences in perceived importance of the Super 7 Expressway. Consistently, residents in Ridgefield perceived the lowest level of importance of the Super 7 Expressway (M = 3.88, SD = 2.2). Statistically speaking, residents in Ridgefield perceived lower importance of the Super 7 Expressway than residents in Bethel, Danbury, Darien, Norwalk, Weston, and Westport. In addition, residents in Danbury perceived the highest importance of the Super 7 Expressway (M = 5.17, SD = 1.56), compared to residents in Darien, New Canaan, Norwalk, Redding, Ridgefield, and Wilton.

Table 8: The Importance of the Super 7 Expressway

On a scale of 1 to 7, how important is it to you in general that the Super 7 Expressway occurs in the future?	N	Mean	Standard Deviation	Mean Differences	
Bethel	26	4.62	1.472	b*	
Danbury	100	5.17	1.557	b***	a
Darien	38	4.63	1.550	b**	b*
New Canaan	30	4.20	1.400		b*
Norwalk	164	4.60	1.623	b**	b*
Redding	16	4.13	1.708		b*
Ridgefield	32	3.88	2.211	a	b***
Weston	16	4.88	1.310	b**	
Westport	32	4.97	1.092	b**	
Wilton	32	4.34	1.619		b*
Total	486	4.65	1.620		

Note. Column: Means that do not share a common subscript significantly differ, *<.1, **< .05, **< .000.

3. *MANCOVA* Tests

To further examine whether there are any significant demographics that influence how residents feel about the Super 7 Expressway, *MANCOVA* tests were conducted. The *MANCOVA* procedure was used with position toward the Super 7 Expressway, perceived importance of the Super 7 Expressway, perceived benefits of the Super 7 Expressway, and the impact of the Super 7 Expressway on community as the 4 dependent variables. Similar to the *ANOVA* tests, residency was used as the independent variable, whereas familiarity with the current RT-7, familiarity with driving on the current RT-7, familiarity with the Super 7 Expressway, ethnic background, age, income level, work location, and gender were used as the covariates.

The results (see Table 9) showed that there was a main effect for residency, Wilks' $\lambda = .87$, F (36, 1741) = 1.862, $p < .001$; the mean vectors were not equal and the set of means among different towns was significantly differentiated. Moreover, 5 covariates were found to contribute to the model significantly. Table 10 further documents the tests of between-subjects effects for residency and 5 covariates.

Table 9: Multivariate Tests

Effect	Wilks' λ	F	Df	p
Intercept	.850	20.446	4, 464	.000
Familiarity with the current RT 7	.974	3.111	4, 464	.015
Familiarity with driving on the current RT 7	.971	3.44	4, 464	.009
Familiarity with the Super 7 Expressway	.898	13.129	4, 464	.000
Ethnic background	.981	2.241	4, 464	.064
Age	.981	2.219	4, 464	.066
Income level	.956	5.375	4, 464	.000
Work location	.996	.461	4, 464	.764
Car ownership	.996	.435	4, 464	.783
Gender	.973	3.185	4, 464	.013
Residency	.868	1.862	36, 1741	.001

The tests of between-subjects effects based on the individual univariate tests were reported in Table 10. The more residents are familiar with the current RT-7, the more they will support the Super 7 Expressway, F (4, 464) = 4.564, $p < .033$. The more residents are familiar with driving on the current RT-7, the more they believe that the Super 7 Expressway will impact their communities positively, F (4, 464) = 6.92, $p < .009$. The more residents are familiar with the Super 7 Expressway, the more they support the Super 7 Expressway, F (4, 464) = 29.436, $p <$ .000, and believe that the Super 7 Expressway is important to them, F (4, 464) = 51.387, $p <$ .000. They also believe more that the Super 7 Expressway will impact their communities positively, F (4, 464) = 28.378, $p < .000$, and benefit them individually, F (4, 464) = 27.274, $p <$ .009.

Another two variables that contributed to the model are income and gender. The higher income levels residents have, the more they will support the Super 7 Expressway, F (4, 464) = 4.138, $p <$ .042, and believe that the Super 7 Expressway is important to them, F (4, 464) = 13.372, $p <$

.000. They also believe more that the Super 7 Expressway will benefit them individually, F (4, 464) = 7.42, $p < .007$. Finally, male residents (M = 5.27, SD = 1.68) support the Super 7 Expressway more than female residents (M = 4.9, SD = 1.55), F (4, 464) = 4.468, $p < .035$.

Table 10: Tests of Between-Subjects Effects

Source	Dependent Variable	*F*	*P*
Familiarity with the current RT 7	Positions	4.564	.033
Familiarity with driving on the current RT 7	The impact on community	6.92	.009
Familiarity with the Super 7 Expressway	Positions	29.436	.000
	Perceived benefits	27.274	.000
	The impact on community	28.378	.000
	Perceived importance	51.387	.000
Income level	Positions	4.138	.042
	Perceived benefits	7.42	.007
	Perceived importance	13.372	.000
Gender	Positions	4.468	.035
Residency	Positions	3.678	.000
	Perceived benefits	2.650	.005
	The impact on community	3.440	.000
	Perceived importance	3.544	.000

Appendix A: Survey

1 What is your ID assigned to you on your invitation letter?

2 How familiar are you with the current RT-7? If you never heard of RT-7, please pick 0.
0 Not very familiar 1 2 3 4 5 6 7 Very familiar

3 How familiar are you with driving on the current RT-7? If you never use RT-7 before, please pick 0.
0 Not very familiar 1 2 3 4 5 6 7 Very familiar

4 How familiar are you with the idea of the Super 7 Expressway? If you never heard of the idea before, please pick 0.
0 Not very familiar 1 2 3 4 5 6 7 Very familiar

5 On a scale of 1 to 7, would you support or oppose the Super 7 Expressway? If you have a neutral attitude, please circle 4. Please bear in mind that Super 7 Expressway is different from expanding the current RT-7 now by widening it from two lane road (one in each direction) to a four lane road (two in each direction).
Oppose 1 2 3 4 5 6 7 Support

6 Would you support or oppose the Super 7 Expressway?
Support
Oppose
Neutral
I do not know at this moment

7 On a scale of 1 to 7, how much would the Super 7 Expressway benefit you in general? If it would not change anything, please circle 4.
Would make things worse 1 2 3 4 5 6 7 Would make things better

8 On a scale of 1 to 7, how much would the Super 7 Expressway impact your community in general? If it would not change anything, please circle 4.
Would negatively impact my community 1 2 3 4 5 6 7 Would positively impact my community

9 On a scale of 1 to 7, how important is it to you in general that the Super 7 Expressway occurs in the future?
Not important at all 1 2 3 4 5 6 7 Very important

10 Have you ever used the current RT-7 before?
Yes, please continue on question 11
No, please jump to question 17 and complete the rest of the questions.

11 How far, in miles, do you travel along the current RT-7?

12 How long have you been using the current RT-7?
Never use it
Less than 1 year
1-3 year
4-6 years
7-9 years
10-12 years
13-15 years

More than 15 years

13 How often do you travel along the current RT-7?
Never use it
Daily
A few times per week
Once a week
A few times per month
Once a month
A few times per year
Once a year
Other, please specify

14 What is the main purpose of your travel along the current RT-7?
Never use it
Business
Work
School related
Shopping
Recreational uses
Other, please specify

15 How often will you be using the Super 7 Expressway if it will be expanded to where you live? If you have no intention to use the expansion of RT-7, please pick 0.
0 Not very often 1 2 3 4 5 6 7 Very often

16 What will be the main purpose of your travel along the Super 7 Expressway if it will be expanded to where you live?
Never use it
Business
Work
School related
Shopping
Recreational uses
Other, please specify

17 What is your gender?
Male
Female

18 What is your ethnic background?
Caucasian
African American
Hispanic
Native American
Asian
Pacific Islander
Middle Eastern
Other, please specify

19 How old are you?

20 Which of the following best describes the area you live in?
Urban
Suburban

Rural

21 In what town do you live?
Bethel
Danbury
Darien
New Canaan
Norwalk
Redding
Ridgefield
Stamford
Weston
Westport
Wilton
Other, please specify

22 In what town do you work?
Bethel
Danbury
Darien
Norwalk
Redding
Ridgefield
Weston
Westport
Wilton
Other, please specify

23 What is your annual (individual) income?
Less than $25,000
$25,000 to $49,999
$50,000 to $75,000
Greater than $75,000

24 Do you have a car to drive around?
Yes
No

Appendix B: Invitation Letter

University of Connecticut
Stamford Campus

Invitation ID:
Respond by: 05/31/2009

Dear Resident,

You're invited to participate in a research study, sponsored by CT Office of Policy and Management, to develop a better understanding of residents' opinions about the expansion of the current CT-7.

This research study is a pilot study that can help achieve some important goals for the future including:

- Developing a better way for us all to be smarter commuters of Connecticut.
- Reducing possible waste to build costly transportation infrastructure.
- Substantiating evidence of needs to build transportation infrastructure.
- Ensuring the quality of the transportation residents enjoy in years to come.

This is your invitation to make a difference and the benefits of participating are tremendous.

1. **Winning $50 cash award**

   We want to thank you for your participation. At the end of this research study, we'll conduct a prize drawing on June 1st, 2009 to determine the winners who will be receiving $50 cash award. 40 participants will be receiving $50.

An Equal Opportunity Employer

One University Place
Stamford, Connecticut 06901-2315

Telephone: (203) 251-8400
Facsimile: (203) 251-8592
web: www.stamford.uconn.edu

2. **Continued accountability.**

With your participation, we can determine the most beneficial ways to make recommendations about the future of CT-7.

3. **Continued communication and transparency.**

It's no secret that Connecticut residents have different opinions about the future of CT-7. It's no secret that any transportation infrastructure costs a lot to tax payers and the government. Despite the differences, we all want the best for Connecticut. This study may effectively improve the communication among residents and the government and improve the transparency of what needs to be done based on your opinions.

Here's how you can participate in this study:

- Go to www.stamford.uconn.edu/super7.html to get more information.
- Follow the instruction to read the information sheet.
- Once you are ready, please complete a survey.
- At the end of the survey, you will be asked to key in your invitation ID, available at the top of this letter's front page.
- We'll contact you immediately after the prize drawing on June 1st, 2009 if you are one of the 40 lucky participants.

Please complete this study by May 31, 2009 to win $50. If you have any questions, please call (203) 251-8400. We look forward to your participation in this research study.

Sincerely,

Dr. Michael Ego
Associate Vice Provost
University of Connecticut-Stamford