APPENDIX B CHAPTER 3 SUPPORTING DOCUMENTATION

DOCUMENT	PREPARER	CONTACT
Zoning and Landuse Maps	Washington City St. George City	Nicole Tolley Horrocks Engineers 2162 W. Grove Parkway, Suite 400 Pleasant Grove, Utah 84602
Social / Environmental Justice Analysis	Rocky Mountain Social Science Dr. Richard Krannich	Nicole Tolley Horrocks Engineers 2162 W. Grove Parkway, Suite 400 Pleasant Grove, Utah 84602
Right-of-Way Acquisition Table	Horrocks Engineers Peter Steele	Nicole Tolley Horrocks Engineers 2162 W. Grove Parkway, Suite 400 Pleasant Grove, Utah 84602
Noise Report	Horrocks Engineers Haylie Ferguson	Nicole Tolley Horrocks Engineers 2162 W. Grove Parkway, Suite 400 Pleasant Grove, Utah 84602
Reconnaissance Level Survey	Horrocks Engineers Nancy Calkins	Nicole Tolley Horrocks Engineers 2162 W. Grove Parkway, Suite 400 Pleasant Grove, Utah 84602
Determination of Eligibility and Finding of No Adverse Effect	UDOT Liz Robinson	Nicole Tolley Horrocks Engineers 2162 W. Grove Parkway, Suite 400 Pleasant Grove, Utah 84602
Utah Geological Survey Correspondence	Department of Natural Resources Utah Geological Survey Martha Hayden	Nicole Tolley Horrocks Engineers 2162 W. Grove Parkway, Suite 400 Pleasant Grove, Utah 84602
Warm Springs Park *de minimis* Section 4(f) Finding	UDOT Liz Robinson	Nicole Tolley Horrocks Engineers 2162 W. Grove Parkway, Suite 400 Pleasant Grove, Utah 84602
Aquatic Resources Delineation Report	Horrocks Engineers Nathan Clarke	Ryan Pitts Horrocks Engineers 2162 W. Grove Parkway, Suite 400 Pleasant Grove, Utah 84602
Threatened and Endangered Species, Utah Sensitive Species, and Migratory Bird Habitat Evaluation	Horrocks Engineers Craig Bown	Craig Bown Horrocks Engineers 2162 W. Grove Parkway, Suite 400 Pleasant Grove, Utah 84602

ZONING AND LANDUSE MAPS

PREPARED BY
Washington City
St. George City

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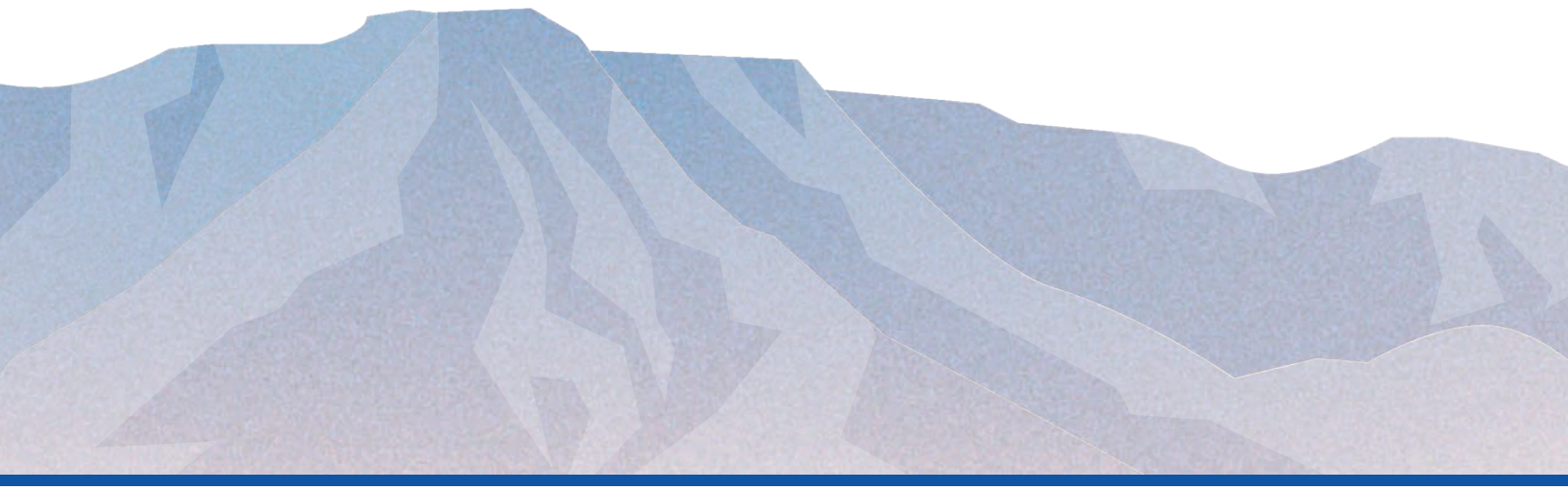

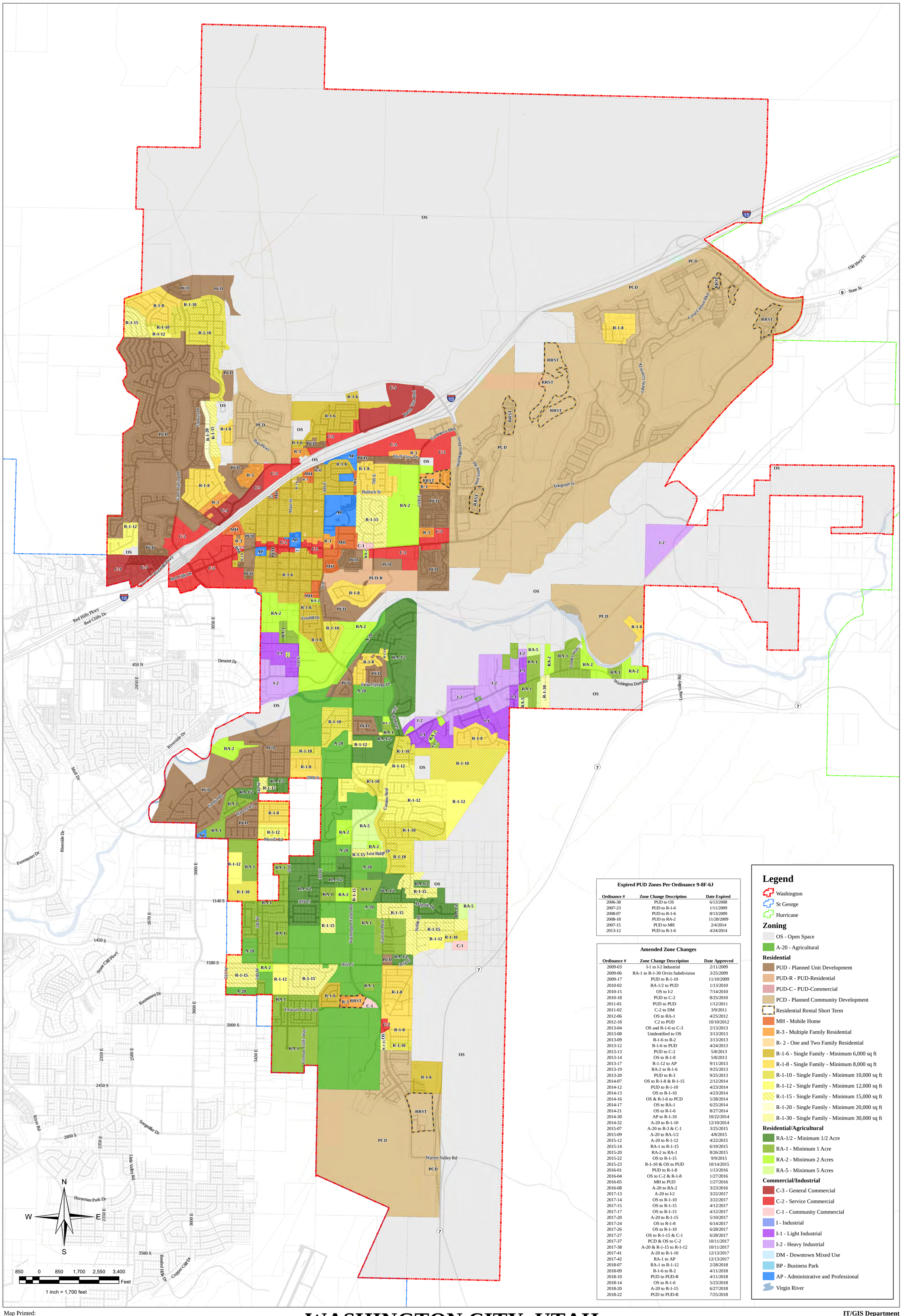

Expired PUD Zones Per Ordinance 9-8F-6J

Ordinance #	Zone Change Description	Date Expired
2006-38	PUD to OS	6/13/2008
2007-23	PUD to R-1-6	1/11/2009
2008-07	PUD to R-1-6	8/13/2009
2008-18	PUD to RA-2	11/28/2009
2007-15	PUD to MH	2/4/2014
2013-12	PUD to R-1-6	4/24/2014

Amended Zone Changes

Ordinance #	Zone Change Description	Date Approved
2009-03	I-1 to I-2 Industrial	2/11/2009
2009-06	RA-1 to R-1-30 Orvin Subdivision	3/25/2009
2009-17	PUD to R-1-10	11/10/2009
2010-02	RA-1/2 to PUD	1/13/2010
2010-15	OS to I-2	7/14/2010
2010-18	PUD to C-2	8/25/2010
2011-01	PUD to PUD	1/12/2011
2011-02	C-2 to DM	3/9/2011
2012-06	OS to RA-1	4/25/2012
2012-18	C2 to PUD	10/10/2012
2013-04	OS and R-1-6 to C-3	2/13/2013
2013-08	Unidentified to OS	3/13/2013
2013-09	R-1-6 to R-2	3/13/2013
2013-12	R-1-6 to PUD	4/24/2013
2013-13	PUD to C-2	5/8/2013
2013-14	OS to R-1-8	5/8/2013
2013-17	R-1-12 to AP	9/11/2013
2013-19	RA-2 to R-1-6	9/25/2013
2013-20	PUD to R-3	9/25/2013
2014-07	OS to R-1-8 & R-1-15	2/12/2014
2014-12	PUD to R-1-10	4/23/2014
2014-13	OS to R-1-10	4/23/2014
2014-16	OS & R-1-6 to PCD	5/28/2014
2014-17	OS to RA-1	6/25/2014
2014-21	OS to R-1-6	8/27/2014
2014-30	AP to R-1-10	10/22/2014
2014-32	A-20 to R-1-10	12/10/2014
2015-07	A-20 to R-3 & C-1	3/25/2015
2015-09	A-20 to RA-1/2	4/8/2015
2015-12	A-20 to R-1-12	4/22/2015
2015-14	RA-1 to R-1-15	6/10/2015
2015-20	RA-2 to RA-1	8/26/2015
2015-22	OS to R-1-15	9/9/2015
2015-23	R-1-10 & OS to PUD	10/14/2015
2016-01	PUD to R-1-8	1/13/2016
2016-04	OS to C-2 & R-1-8	1/27/2016
2016-05	MH to PUD	1/27/2016
2016-08	A-20 to RA-2	3/23/2016
2017-13	A-20 to I-2	3/22/2017
2017-14	OS to R-1-10	3/22/2017
2017-15	OS to R-1-15	4/12/2017
2017-17	OS to R-1-15	4/12/2017
2017-20	A-20 to R-1-15	5/10/2017
2017-24	OS to R-1-8	6/14/2017
2017-26	OS to R-1-10	6/28/2017
2017-27	OS to R-1-15 & C-1	6/28/2017
2017-37	PCD & OS to C-2	10/11/2017
2017-38	A-20 & R-1-15 to R-1-12	10/11/2017
2017-41	A-20 to R-1-10	12/13/2017
2017-42	RA-1 to AP	12/13/2017
2018-07	RA-1 to R-1-12	2/28/2018
2018-09	R-1-6 to R-2	4/11/2018
2018-10	PUD to PUD-R	4/11/2018
2018-14	OS to R-1-6	5/23/2018
2018-20	A-20 to R-1-15	6/27/2018
2018-22	PUD to PUD-R	7/25/2018

Legend

Washington
St George
Hurricane

Zoning

OS - Open Space
A-20 - Agricultural

Residential

PUD - Planned Unit Development
PUD-R - PUD-Residential
PUD-C - PUD-Commercial
PCD - Planned Community Development
Residential Rental Short Term
MH - Mobile Home
R-3 - Multiple Family Residential
R- 2 - One and Two Family Residential
R-1-6 - Single Family - Minimum 6,000 sq ft
R-1-8 - Single Family - Minimum 8,000 sq ft
R-1-10 - Single Family - Minimum 10,000 sq ft
R-1-12 - Single Family - Minimum 12,000 sq ft
R-1-15 - Single Family - Minimum 15,000 sq ft
R-1-20 - Single Family - Minimum 20,000 sq ft
R-1-30 - Single Family - Minimum 30,000 sq ft

Residential/Agricultural

RA-1/2 - Minimum 1/2 Acre
RA-1 - Minimum 1 Acre
RA-2 - Minimum 2 Acres
RA-5 - Minimum 5 Acres

Commercial/Industrial

C-3 - General Commercial
C-2 - Service Commercial
C-1 - Community Commercial
I - Industrial
I-1 - Light Industrial
I-2 - Heavy Industrial
DM - Downtown Mixed Use
BP - Business Park
AP - Administrative and Professional
Virgin River

Map Printed:
August 20, 2018

Washington City
Where Dixie Begins

WASHINGTON CITY, UTAH

Official Zoning Map

Ordinance #2008-27

July 2, 2008

IT/GIS Department
111 North 100 East
Washington City, UT 84780
(435)656-6300

THE BRIGHTER SIDE

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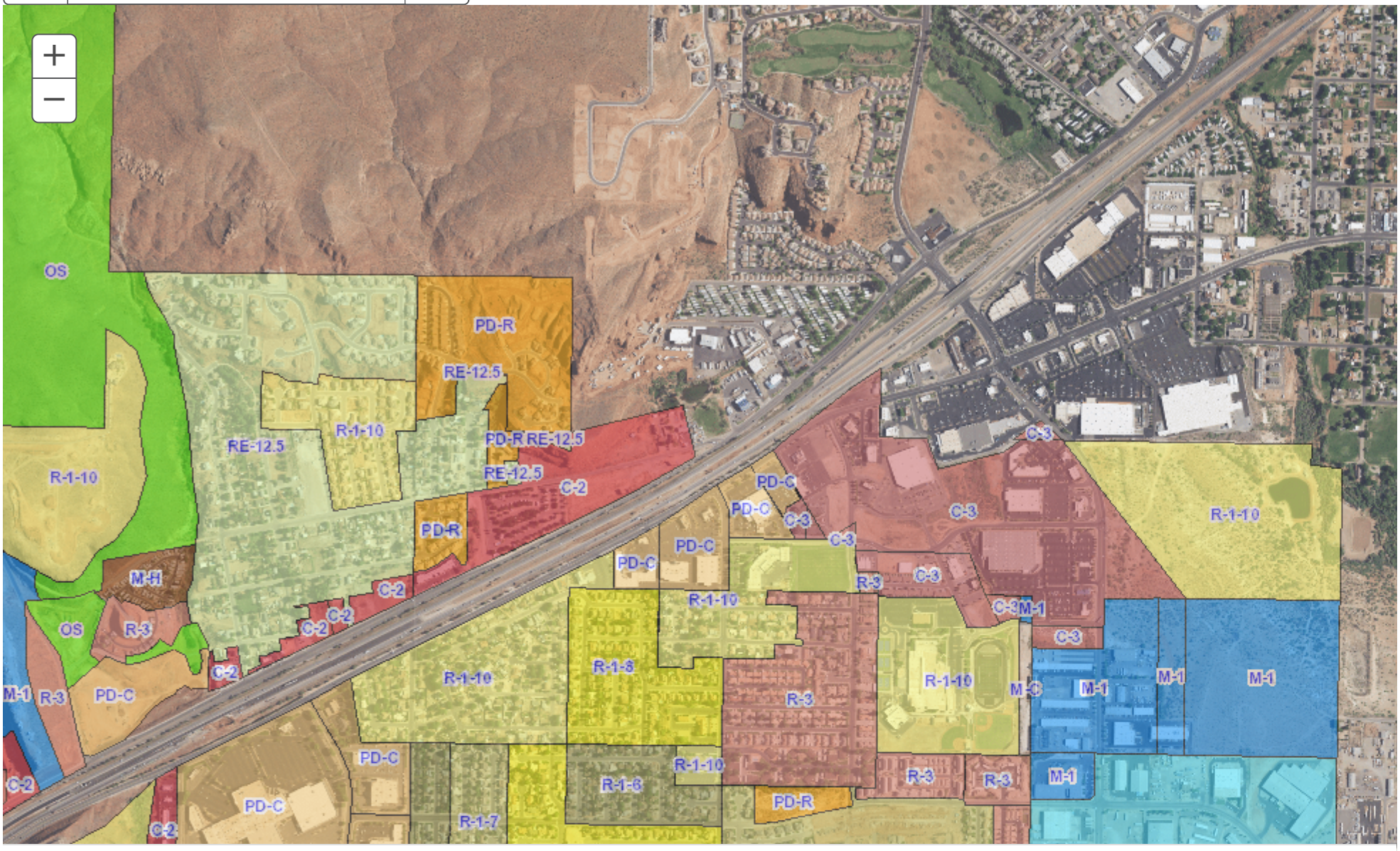
Find address or place



SOCIAL / ENVIRONMENTAL JUSTICE ANALYSIS

PREPARED BY
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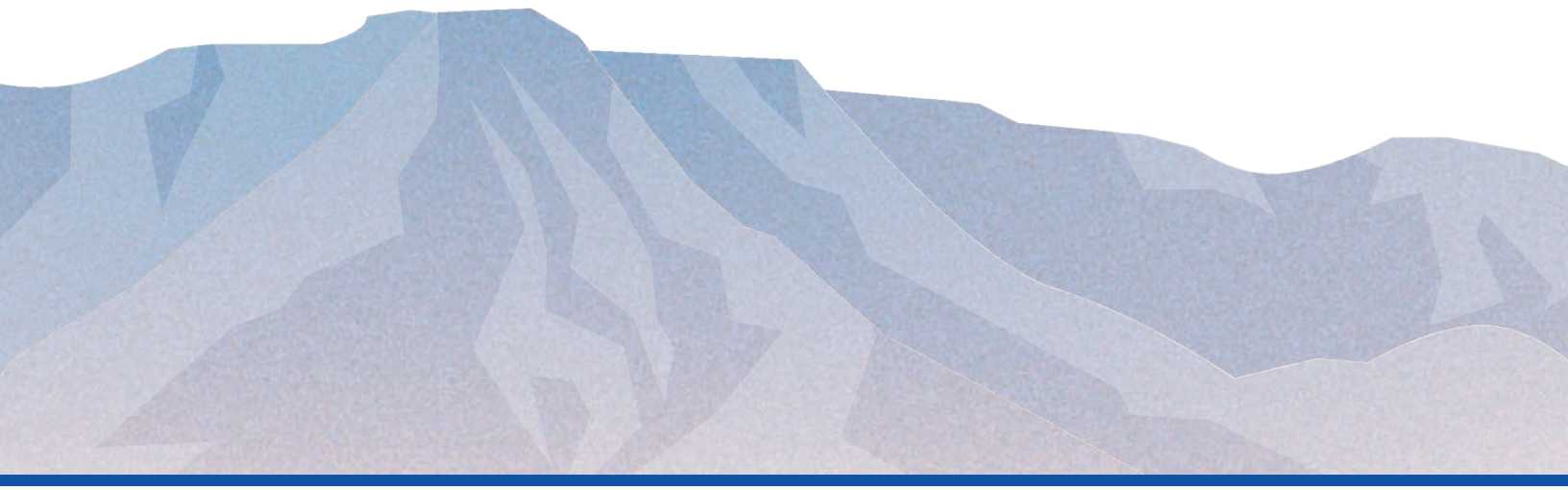

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by UDOT pursuant to 23 USC 327 and a Memorandum of Understanding dated January 17, 2017, and executed by FHWA and UDOT.

Social/Environmental Justice Analysis

I-15 MP 11
Environmental Assessment Project

Project Technical Report

Prepared by:
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November 14, 2018

EXISTING SOCIAL CONDITIONS

The following discussion provides a brief overview of existing social and demographic conditions in Washington City generally, followed by a more in-depth examination of conditions in residential neighborhoods located directly south of I-15 that would be most likely to experience impacts associated with construction of a proposed new I-15 interchange in the vicinity of Milepost 11 and associated construction modifications to existing surface streets in that area. A Community Social Assessment was conducted by Dr. Richard Krannich, Professor Emeritus of Sociology at Utah State University. Attention was focused in part on the extent to which the project might have disproportionate impacts on particularly vulnerable "environmental justice" populations, including racial/ethnic minorities and persons living in economically disadvantaged households. The assessment also addressed potential project effects on community social organization, including levels of localized social interaction and activity patterns, neighborhood social integration and community cohesion, and other key quality of life dimensions. Also considered were residents' perceptions of existing traffic conditions, and their views regarding possible effects of the proposed transportation system upgrades on their community and their neighborhood.

What data sources and methods were used to assess local social conditions?

The community social assessment effort was based on the acquisition and analysis of several types of data. First, data on population size, trends and characteristics for Washington County, Washington City, and Census Block Group areas encompassing neighborhoods in proximity to potential project construction locations were acquired from the U.S. Census Bureau's web site (http://factfinder.census.gov) and other on-line sources that utilize Census data and estimates (e.g., http://city-data.com). These data provide a general profile of social and demographic conditions and trends in the overall community, as well as in more localized areas surrounding the project area.

A second component of the data collection and analysis effort involved administration of self-completion survey questionnaires to adult occupants of residential households located in close proximity to potential project construction areas. Because construction associated with alternatives involving reconfiguration of the existing I-15 interchange at Milepost 10 (Green Springs Drive) or construction of thru-turn facilities at several locations in the vicinity of that interchange would not extend into areas characterized by residential land use, the survey effort did not include a focus on those areas. However, alternatives involving construction of a new interchange at the north end of either Main Street or 300 East along with associated improvements to those surface streets would have considerably greater potential to alter conditions in nearby neighborhoods located south of the I-15 corridor.

To assess social conditions and potential social effects involving those nearby residential neighborhoods, the community social assessment was focused on a study area bounded on the north by I-15 and on the south by Telegraph Street, and extending from approximately ¼ mile to the west of Main Street to approximately ¼ mile to the east of 300 East. Within this overall

study area five spatially-distinct segments were delineated, based on their locations relative to the Main Street and 300 East corridors:

- Residential properties immediately adjacent to Main Street. This category includes residential units situated on parcels that are within or immediately adjacent to potential project construction areas associated with development of a new I-15 interchange at the north end of Main Street as well as roadway improvements along the existing Main Street corridor between I-15 and Telegraph Street. A total of 61 residential units were identified as falling within this Main Street Adjacent segment. All non-vacant households (59) located in this portion of the study area were selected for contact and possible survey participation.

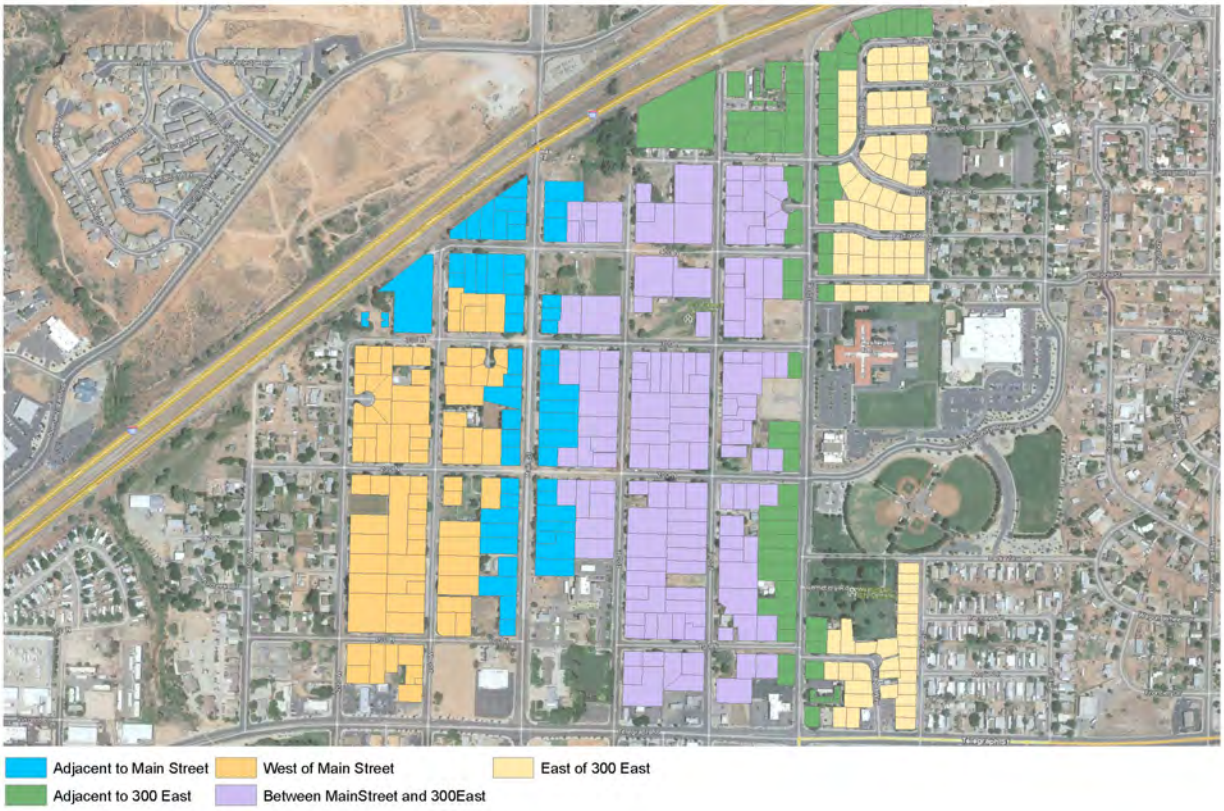
- Residential properties immediately adjacent to 300 East. This category includes residential units situated on parcels that are within or immediately adjacent to potential project construction areas associated with development of a new I-15 interchange at the north end of 300 East as well as roadway improvements along the existing 300 East corridor between I-15 and Telegraph Street. A total of 135 residential units were identified as falling within this Adjacent to 300 East segment. All non-vacant households (116) located in this portion of the study area were selected for contact and possible survey participation.

- Nearby non-adjacent residential properties located west of Main Street. This category includes residences situated on parcels located within an area extending approximately ¼ mile to the west of Main Street and bounded by I-15 on the north and Telegraph Street on the south that are not immediately adjacent to the Main Street corridor or the potential interchange construction site at the north end of that roadway. A total of 74 residential units were identified as falling within this West of Main Street segment. All non-vacant households (70) were selected for contact and possible survey participation.

- Nearby non-adjacent residential properties located between Main Street and 300 East. This category includes residences situated on parcels located within an area between Main Street and 300 East and bounded by I-15 on the north and Telegraph Street on the south that are not immediately adjacent to either the Main Street corridor or the 300 East corridor. A total of 140 residential units were identified as falling within this Between Main Street and 300 East segment. All non-vacant households (134) were selected for contact and possible survey participation.

- Nearby non-adjacent residential properties located east of 300 East. This category includes residences situated on parcels located within an area extending approximately ¼ mile to the east of 300 East and bounded by I-15 on the north and Telegraph Street on the south that are not immediately adjacent to the 300 East corridor or the potential interchange construction site at the north end of that roadway. A total of 90 residential units were identified as falling within this East of 300 East segment.

The overall study area and the five study area segments included within it are depicted below. The study area is characterized by primarily residential land uses, with the vast majority of residential properties being single-family detached homes. Limited commercial land use involving a number of small retail and service businesses exists at the southernmost edge of the study area along Telegraph Street. A complex of municipal buildings and offices is located on 200 East between Telegraph Street and 200 North. A large community recreation center and a public elementary school are located on the east side of 300 East at approximately 300 North, and the Washington City Cemetery also adjoins the east side of 300 East at approximately 150 North.



Printed self-completion questionnaires were administered to selected households in each of these spatially-distinct segments of the study area during October 26 to November 5, 2017 using a personalized door-to-door "drop-off/pick-up" methodology. Response was requested from the adult household member whose birthday had occurred most recently as a means of randomizing selection of one respondent per household; another adult household member was asked to complete the survey if that individual was not available. A Spanish language version of the questionnaire was provided as needed. A total of 502 residences across the five study area segments were initially identified as candidates for survey participation. Forty-two of these residential properties were determined to be vacant, resulting in an adjusted total of 460 households identified as candidates for survey participation. Completed

survey questionnaires were retrieved from 371 of those households, representing an overall response rate of 80.7%. Response rates for the five sampling areas were 82% in the Main Street Adjacent segment (50 completed surveys), 75% in the 300 East Adjacent segment (87 completed surveys), 90% in the West of Main Street segment (63 completed surveys), 83% in the Between Main Street and 300 East segment (111 completed surveys), and 76% in the East of 300 East segment (60 completed surveys).

Overall, what social conditions and trends characterize the local community?

Washington County and Washington City have experienced sustained and substantial population growth trends in recent years. Data reported by the US Census Bureau indicate that during 2000-2010 the countywide population grew from 90,354 to 138,115, and continued to increase to an estimated 165,662 by 2017. The population of Washington City more than doubled between 2000 (8,198 residents) and 2010 (18,761), with ongoing growth resulting in an estimated 26,405 residents as of 2017.

Census data indicate that Washington City and Washington County are characterized by generally similar levels of racial and ethnic diversity. Current (2017) Census Bureau estimates indicate that 10.5% of Washington City residents are classified as having a racial identity other than white-alone (compared to 6.5% for Washington County), and 9.2% are classified as Hispanic (compared to 10.4% for the county). An estimated 18.5% of Washington City residents are age 65 or older (compared to 21% of county residents). In 2016 the median household income reported for Washington City was $54,463, slightly higher than the $52,865 reported for Washington County. Current Census Bureau data also indicate that in 2017 14.2% of Washington City residents were classified as living in poverty, slightly higher than the 12.6% reported for Washington County overall. Based on these Census data, the population of Washington City can be characterized as being similar to that of Washington County overall with respect to the presence of racial/ethnic minority residents, elderly residents, overall income levels, and the proportion of residents living at or below the poverty level.

An approximation of social and demographic characteristics for more localized portions of Washington City that encompass the project study area can be derived from data reported for Census Block Group areas. There are two of these census-defined block groups that provide coverage for areas encompassing (but also extending farther to the south and east from) the localized neighborhoods that are the focus of the community social analysis:

- **Block Group 270802-2**. This block group encompasses western portions of the study area. It is bounded by I-15 on the north, by 3050 East on the west, and by 200 East on the east. Because the southern boundary of the block group extends into an area approximately six blocks to the south of Telegraph Street, it includes both a portion of the social assessment study area and a substantial portion of Washington City located farther south. Census data indicate that this Block Group Area had a population of 2,231 in 2010, living in 699 households.

- **Block Group 270801-2**. This block group encompasses eastern portions of the study area. It is bounded by I-15 on the north and 200 East on the west, but also extends a considerable distance beyond the study area neighborhoods into areas located to the east near Harrisburg Junction, and into areas well to the south of Telegraph Street. Census data indicate that this Block Group Area had a population of 7,358 in 2010, living in 2,544 households.

Selected social and demographic characteristics of populations living in these two Census Block Group areas are summarized in Table 1.

Table 1. Selected Socio-Demographic Characteristics for Two Census Block Group Areas Encompassing Study Area Neighborhoods (2010).

	Percent reporting a race other than white	Percent identified as Hispanic	Median household income	Percent of population below poverty level
Block Group 270802-2	6.4%	4.0%	$32,000	5.5%
Block Group 270801-2	9.0%	5.8%	$35,911	8.1%

Source: www.city-data.com, accessed 25 October 2018

These data reveal that the percentage of residents classified as having a racial identity other than white and the percentage of residents classified as Hispanic are both slightly lower in these more localized Block Group areas than has been reported for Washington City overall. Median household income levels appear to be somewhat lower in these Block Group areas than those reported for Washington City. The percentage of the population living at or below the poverty level in these block group areas is also lower than was reported above for the city overall. However, none of these differences are particularly large, and they may to some degree reflect shifts that have occurred during the period between the time of the 2010 census that is the basis for Block Group data and estimates of these conditions reported above for Washington City overall that are based on more current data.

What do survey data reveal about local-area populations and social conditions?

Additional documentation of social conditions across portions of the project area is provided by results from the community social survey conducted specifically for this project. In addition to detailing selected demographic characteristics of local-area residents, several major aspects of social organization are explored, including neighborhood social integration and community cohesion, neighborhood interaction and activity patterns, and patterns of use on nearby portions

of I-15 as well as surface streets that might be affected by proposed project activities. Survey results are reported separately for respondents whose residential properties are located within each of the five designated study area segments, allowing examination and comparison of response patterns for residents of the two main surface street corridors (Main Street and 300 East) that could be directly affected by the construction of a new I-15 interchange as well as for residents who live in other nearby neighborhoods that surround those corridors.

Respondent and Household Socio-Demographic Characteristics

Several questions were included in the survey questionnaire to assess the socio-demographic characteristics of residents and households in the five designated study area segments. Table 2 presents an overview of all of the social and demographic characteristics discussed in this section.

For the study area overall slightly more than one-third (37%) of responding households were reported as having only one or two members. However, the presence of households with no more than two members was notably higher in the study area segment located immediately adjacent to the Main Street corridor (57%), and much lower in the segment comprised of neighborhoods located within one-quarter mile to the east of 300 East (16%). The percentage of surveyed households in which one or more residents were reported to be age 65 or older was also notably higher among those living immediately adjacent to the Main Street corridor (52%) than was the case for the study area overall (34%) or any of the other individual study area segments. Also, the percentage of households with at least one child under the age of 18 living at home was considerably lower for the Main Street adjacent segment (39%) than was the case for the overall study area (58%), while the presence of children in the home was much higher (69%) in both the 300 East Adjacent and East of 300 East segments. In combination these results suggest that, in comparison to other portions of the study area, the segment comprised of residences located immediately adjacent to the Main Street corridor is characterized by a higher percentage of older persons, a lower percentage of households in which children are present, and a greater percentage of households in which only one or two occupants are present.

Substantial differences are also evident across study area segments when we consider survey responses involving ethnicity and racial identity. As indicated in Table 2 the presence of households in which one or more members identify as Hispanic is higher in the study area segment located immediately east of 300 East, and considerably higher in the 300 East Adjacent segment, than is the case for the study area overall or in other segments located adjacent to Main Street, immediately west of Main Street, or between Main Street and 300 East. One-fourth of respondents living in homes that adjoin the 300 East corridor indicated that they are of Hispanic origin, and one-third reported that one or more other members of their households are Hispanic. In contrast, only 6% of respondents from the Main Street Adjacent segment and 7% of those from the segment between Main Street and 300 East identified themselves as Hispanic.

Table 2 – Social and demographic characteristics of five social assessment study area segments (2018 survey results).

	Main Street Adjacent	300 East Adjacent	Between Main and 300 East	West of Main St.	East of 300 East	Total Area
Households with one or two occupants	57%	31%	39%	43%	16%	37%
Households with at least one occupant age 65 or older	52%	28%	32%	35%	28%	34%
Households with at least one child age 18 or younger	39%	69%	51%	54%	69%	58%
Respondent identified as Hispanic	6%	25%	7%	10%	21%	14%
Other household member(s) identified as Hispanic	11%	33%	7%	10%	23%	16%
Respondent's race identified as other than white/Caucasian	11%	18%	7%	5%	20%	12%
Other household members' race identified as other than white/Caucasian	9%	15%	9%	7%	19%	12%
Households with at least one racial/ethnic minority member*	26%	37%	17%	13%	33%	25%
Annual household income below $50,000	66%	66%	43%	47%	68%	54%
Annual household income $100,000 or higher	5%	6%	11%	11%	8%	9%
Households classified as below poverty threshold**	15%	16%	14%	12%	19%	15%

*Calculation of the percentage of households with minority member(s) based on those for which response was provided to race/ethnicity questions.

**Calculation of the percentage of below-poverty households based on those for which a response was provided to the household income question.

Variations across study area segments are also evident when examining the racial identities reported by survey participants. Approximately one-fifth of respondents living in the 300 East Adjacent segment (18%) and the East of 300 East segment (20%) identified themselves as non-white, compared to just 5% of those living in the area immediately west of Main Street and 6% of respondents from the Main Street Adjacent area. Similarly, the percentage of respondents indicating that one or more other household members are non-white was also higher in the 300 East Adjacent (15%) and East of 300 East (19%) segments than was the case in other portions of the study area. More detailed breakdowns of the reported racial identities of survey participants (Table 3) and of other household members (Table 4) reveal that the most frequently-identified non-white response category was "other," corresponding in nearly all instances to respondents' identification of themselves or other household members as non-white Hispanic. There is also a notable presence in most portions of the study area of households in which one or more occupants are identified as Native American/American Indian.

When responses to these questions regarding Hispanic ethnicity and the racial identities of survey respondents as well as other household members are considered simultaneously, we find that for the study area as a whole one-fourth of responding households are characterized by the presence of at least one racial/ethnic minority individual (Table 2). The presence of households in which a racial/ethnic minority occupant is present is highest in the study area segment adjoining 300 East (37%) and the segment located just to the east of 300 East (33%), and lowest in the segment located just to the west of Main Street (13%).

Table 3. Self-described racial identities of survey respondents.

	White/ Caucasian/ Anglo	African American/ Black	Asian	Pacific Islander	Native American/ American Indian	Other (please specify):
West of Main	95.2%	0.0%	0.0%	0.0%	0.0%	4.8%
Main Street Adjacent	89.4%	0.0%	0.0%	0.0%	4.3%	6.4%
Between 300 E and Main	93.0%	1.0%	0.0%	0.0%	3.0%	3.0%
300 East Adjacent	82.1%	0.0%	0.0%	0.0%	2.6%	15.4%
East of 300 East	79.6%	1.9%	0.0%	0.0%	3.7%	14.8%
Total	88.3%	0.6%	0.0%	0.0%	2.6%	8.5%

Table 4. Reported racial identities of other household members.

	White/ Caucasian/ Anglo	African American/ Black	Asian	Pacific Islander	Native American/ American Indian	Other (please specify)
West of Main	93.1%	1.7%	1.7%	1.7%	1.7%	8.6%
Main Street Adjacent	90.9%	0.0%	0.0%	0.0%	6.8%	11.4%
Between 300 E and Main	90.6%	2.1%	0.0%	0.0%	7.3%	3.1%
300 East Adjacent	85.1%	0.0%	1.4%	0.0%	4.1%	17.6%
East of 300 East	81.1%	0.0%	1.9%	0.0%	7.6%	15.1%
Total	88.3%	0.9%	0.9%	0.3%	5.5%	10.5%

Survey data also reveal variations in household income levels across the different segments of the study area. As indicated in Table 2, approximately two-thirds of survey participants living in the Main Street Adjacent, 300 East Adjacent, and East of 300 East segments reported annual household incomes below $50,000, while fewer than half of respondents living in the area between Main Street and 300 East or in the neighborhoods located immediately to the west of Main Street reported incomes falling below $50,000. Also, the percentage of respondents reporting annual household incomes of $100,000 or more was lowest for the Main Street Adjacent segment (5% of responses) and the 300 East Adjacent segment (6% of responses).

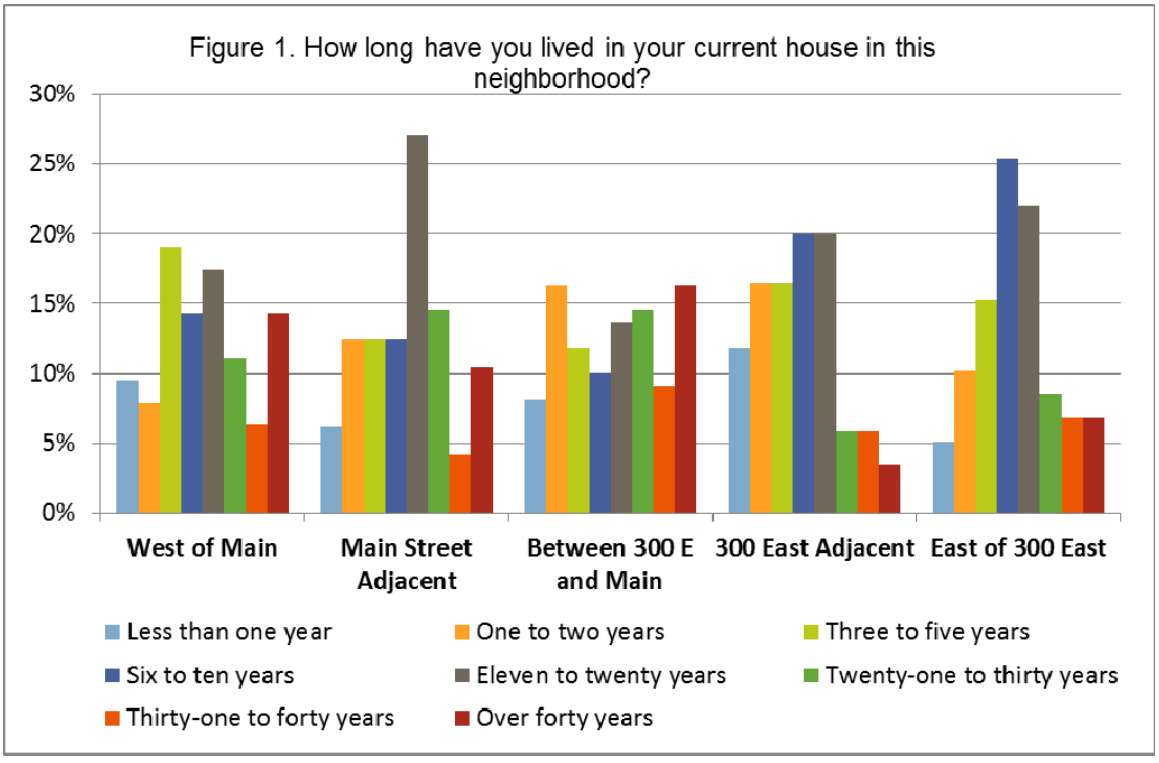
An examination of responses to the household income question combined with responses to a question asking about the number of persons living in the household provides a basis for examining the extent to which households falling below the federally-designated poverty level are present throughout the study area. For the overall study area the survey data indicate that approximately 15% of responding households (e.g., those for which household income was reported) were at or below the poverty level, a figure that is close to the 14.2% figure reported in 2017 U.S. Census Bureau estimates for Washington City as a whole. As is also indicated in Table 2, there is only limited variation in the presence of below-poverty households across the five study area segments, ranging from a low of 12% of households that responded to the income question in the segment located immediately to the west of Main Street to a high of 19% in the segment located immediately to the east of 300 East. Similar percentages of households located in the Main Street Adjacent segment (15%) and the 300 East Adjacent segment (16%) reported incomes below the poverty level. Based on these data, there does not appear to be an especially high concentration of below-poverty households in the study area overall, or in the more localized individual study area segments.

In combination these response patterns indicate that, in comparison to the overall population of Washington City, the study area considered here for the Social/Environmental Justice analysis is characterized by a higher concentration of racial/ethnic minority populations. The presence of households with one or more racial/ethnic minority members is highest in the study area segment that includes residences immediately adjacent to the 300 East corridor, where more than one-third of households are minority-occupied. At the same time, survey data do not indicate an especially high concentration of below-poverty households in this study area. In particular, the study area segments located nearest to the Main Street or 300 East corridors where construction alternatives under consideration could have the greatest potential to generate adverse impacts on local residents exhibit percentages of below-poverty households (15% and 16% respectively) that are only slightly higher than has been reported for Washington City as a whole.

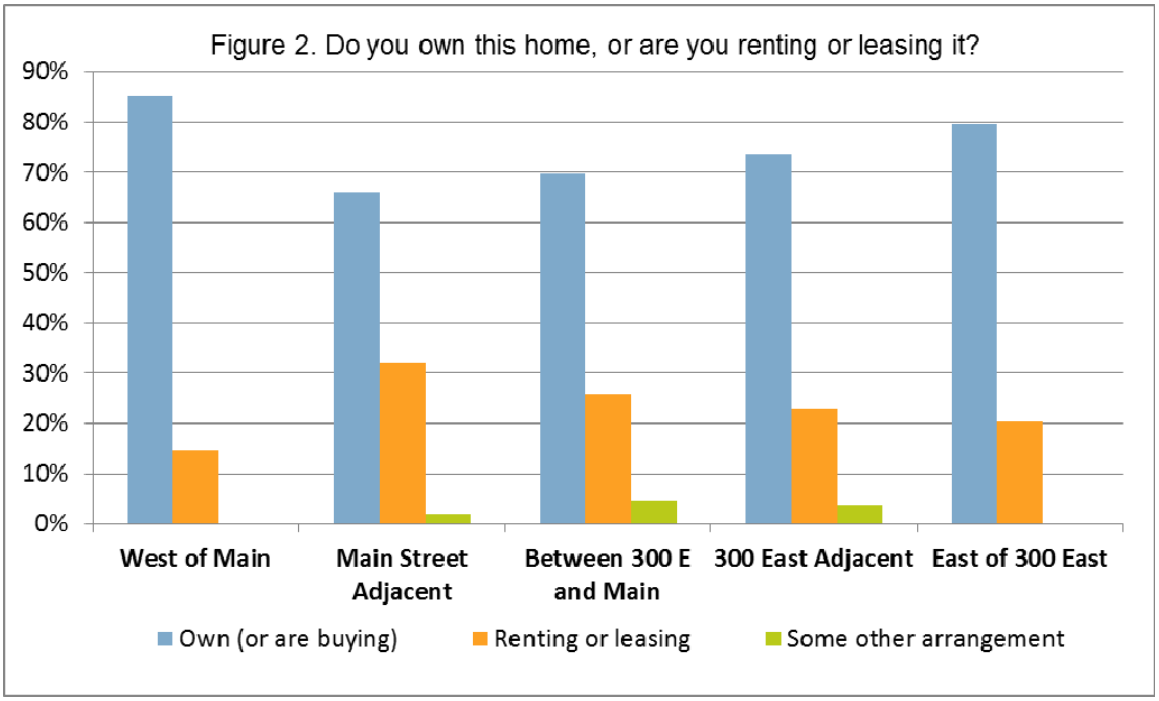
Neighborhood Social Integration and Cohesion

Several questions were included in the survey questionnaire to assess various aspects of social integration and cohesion in the study area. These questions focus primarily on levels of familiarity and interaction among residents, and the strength of residents' attachment to their neighborhoods. This information provides an important benchmark for evaluating the extent to which disruptive social effects might occur as a result of relocations or other changes to neighborhood conditions that could accompany the proposed transportation improvements.

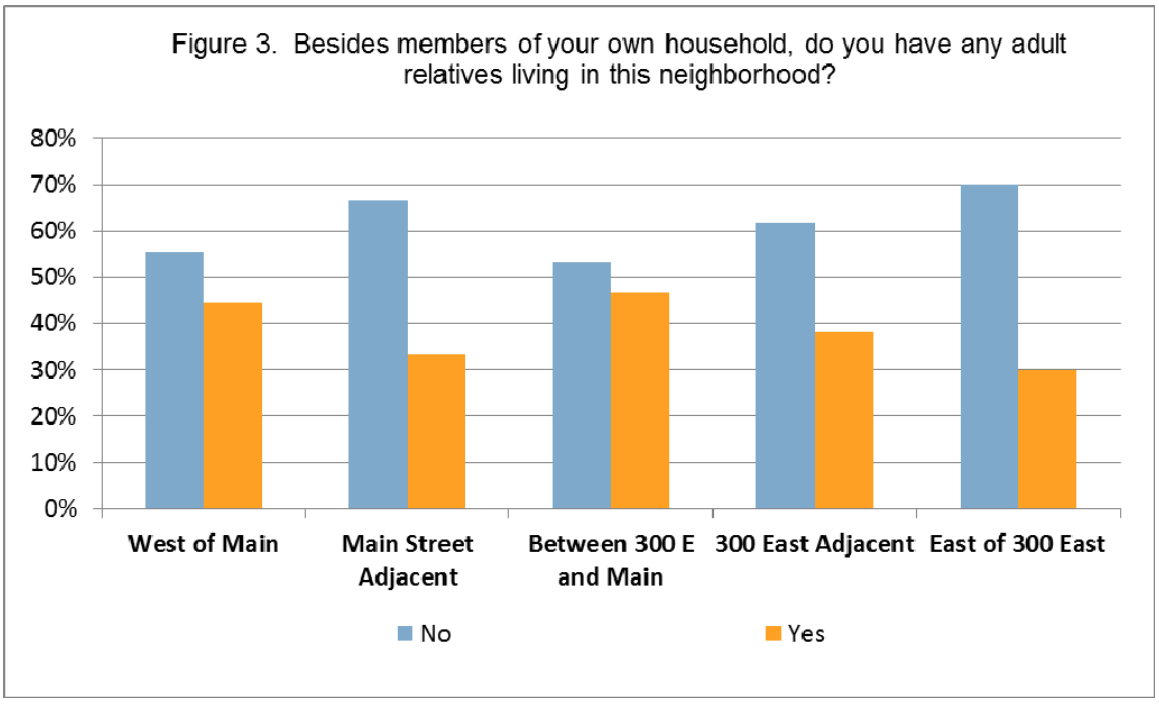
Respondents were first asked to indicate how long they had lived in their current home in the study area. Inclusion of this question is based on a large body of research evidence indicating that longer-term residents tend to exhibit higher levels of social attachment and integration into neighborhood and community life than is the case among shorter-term residents (Kasarda and Janowitz 1974; Jennings and Krannich 2013). Survey results summarized in Figure 1 indicate that the proportion of residents who have lived in their home for over 10 years is highest in the Main Street Adjacent segment of the study area (56% of responses) and among those living in neighborhoods located between Main Street and 300 East (54%). Slightly lower percentages of respondents reported having lived in their homes for more than 10 years in the area located immediately west of Main Street (48%) and in the area immediately to the east of 300 East (44%). Respondents living in homes adjacent to the 300 East corridor were least likely to report having lived there for more than 10 years (36%). With respect to the two corridors where construction activities could be focused, it is clear that the population living in the area immediately adjacent to Main Street has on the whole lived there longer than is the case for those who live immediately adjacent to 300 East.



A second item included in this portion of the questionnaire asked respondents to indicate whether they own (or are purchasing) their home, or if they are renting/leasing. Home ownership represents another potentially important correlate of attachment and commitment to the local neighborhood. As is evident from Figure 2, a substantial majority of respondents living in all portions of the study area indicated that they own (or are buying) their homes (76% for the study area overall). Slightly lower levels of home ownership were reported by those living in the Main Street Adjacent segment (66%) than in other study area segments, while home ownership was reported most often by persons living in the area immediately to the east of 300 East (80% of responses).

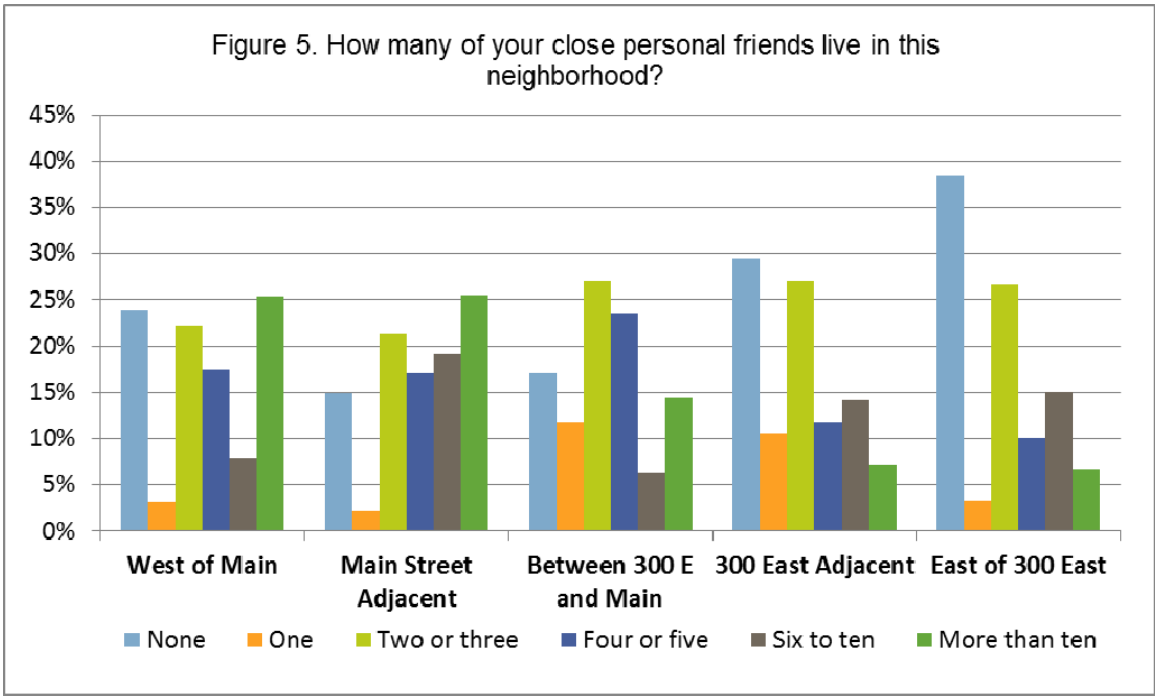


As indicated in Figure 3, across all five of the study area segments most survey participants reported that they do not have adult relatives (other than members of their own households) living in nearby neighborhoods (e.g., within a 2 to 3 block distance from their home). At the same time the data reveal that many area residents do have relatives living nearby, with the percentage of respondents saying that relatives are present in nearby neighborhoods ranging from a low of 30% in the segment located immediately to the east of 300 East to a high of 47% in the segment located between Main Street and 300 East. The extent to which relatives were reported to be living nearby was fairly similar for respondents located in the Main Street Adjacent area (33%) and the 300 East Adjacent area (38%).

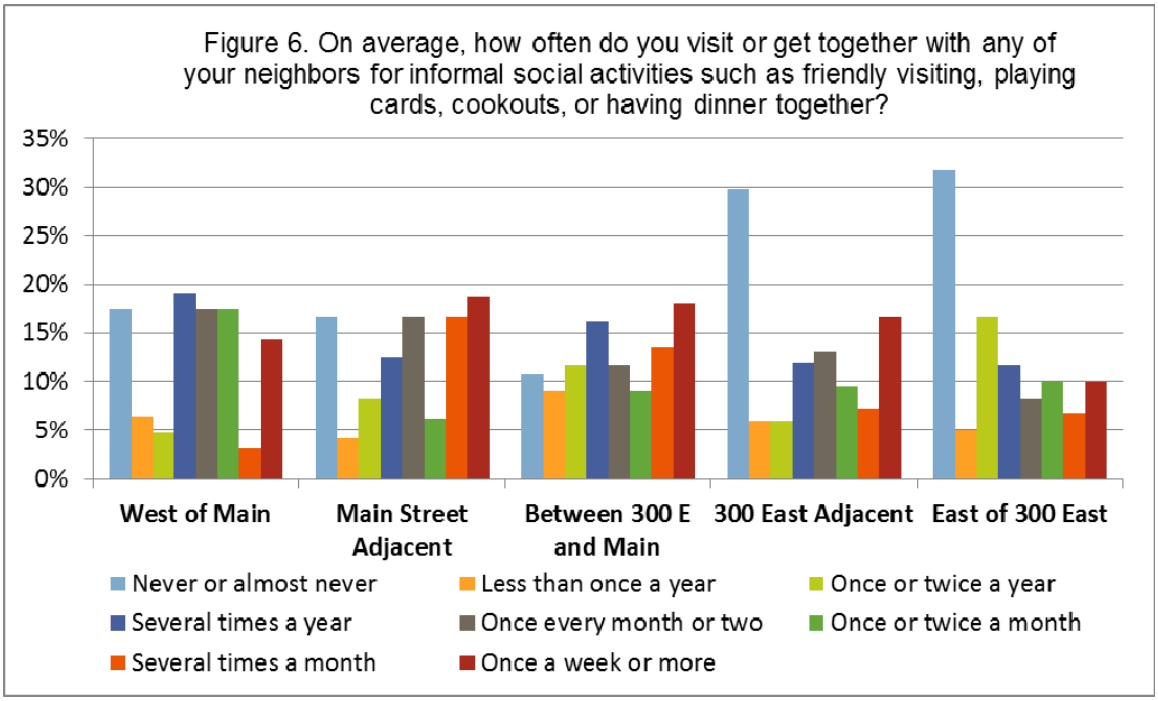


Survey participants were also asked to indicate the number of adults living in the ten houses located nearest to their home who they know on a first-name basis. As is evident from the results summarized in Figure 4, very few respondents living in any portion of the study area indicated that they do not know any of their nearby neighbors. At the same time, the percentage of respondents reporting that they know 10 or more adult neighbors on a first-name basis was higher for those living in the study area segment immediately to the west of Main Street (54%), the Main Street Adjacent segment (44%), and the area located between 300 East and Main Street (44%) than was observed for either the segment immediately to the east of 300 East (34%) or the 300 East Adjacent segment (28%). When focusing on the two corridors where construction alternatives are under consideration, it is clear that levels of familiarity with neighbors are higher among those living adjacent to Main Street than is the case for residents whose homes are adjacent to the 300 East corridor.

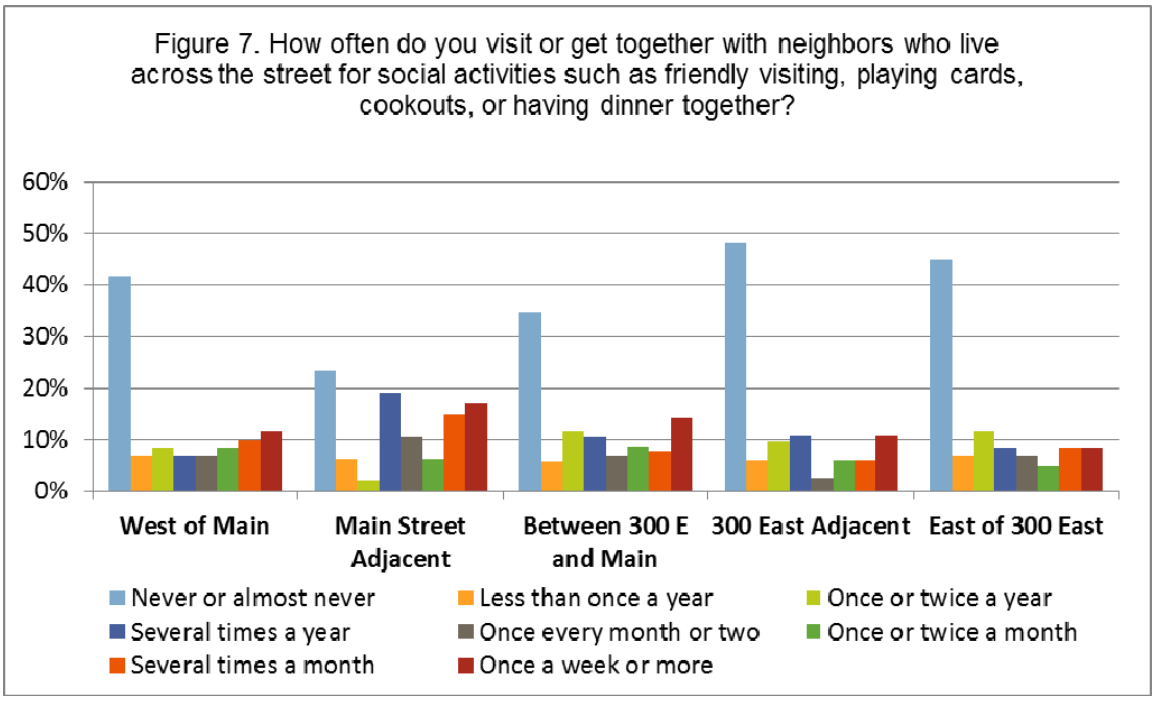
In addition, survey participants were asked to indicate how many of their close personal friends live within their neighborhood (within 2-3 blocks distance from their home). The results summarized in Figure 5 reveal that survey participants living in the area immediately to the east of 300 East were most likely to report that they have no close friends living nearby (38% of responses), followed by those living in the area immediately adjoining 300 East (29% of responses). The percentage of respondents indicating that they have more than 10 close friends living in their immediate neighborhood was highest in the Main Street Adjacent segment (26%) and the segment immediately to the west of Main Street (25%), considerably lower for those living in the area between Main Street and 300 East (14%), and lowest among those living in the 300 East Adjacent segment and the area immediately to the east of 300 East (7% of responses for both areas).



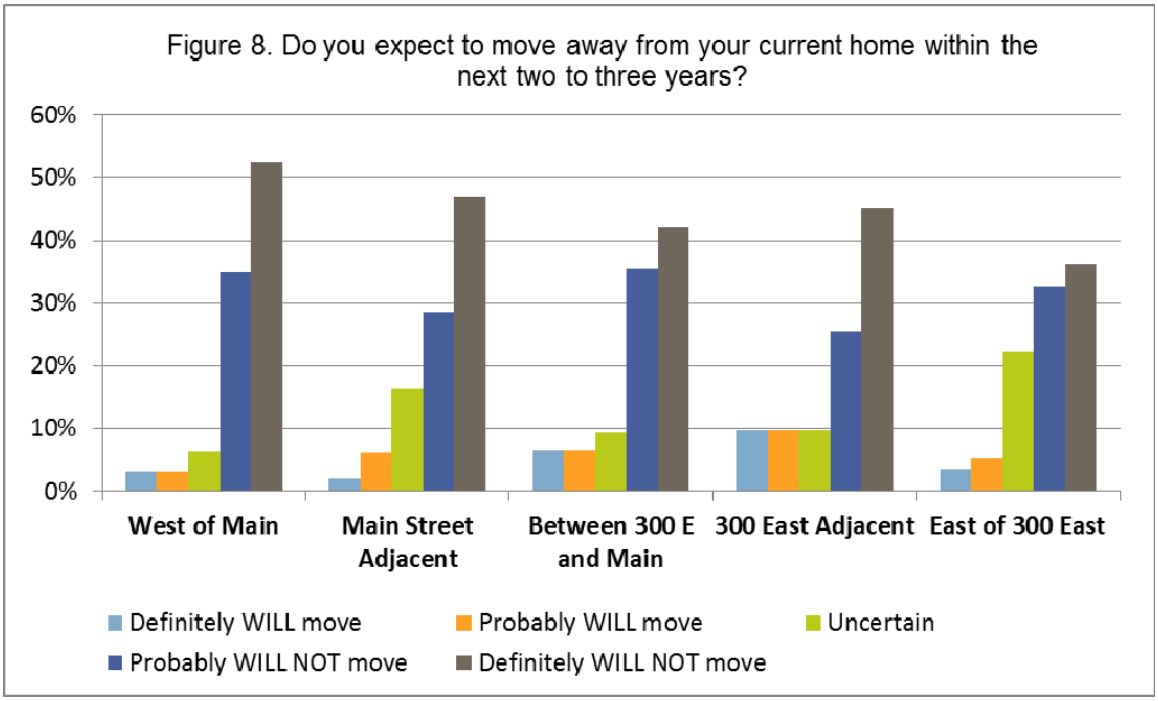
As another indicator of neighborhood-level social cohesion, respondents were asked how often they get together with any of their neighbors for informal social activities like friendly visiting, playing cards, cookouts, or having dinner together. As indicated in Figure 6, the percentage of individuals reporting that they "never" engage in these types of neighboring activities was highest in the 300 East Adjacent area (30% of responses) and in the area immediately to the east of 300 East (32%). In contrast only 17% of respondents living in either the Main Street Adjacent segment or the segment immediately to the west of Main Street, and only 11% of those living in the area between Main Street and 300 East, reported that they never engage in such social activities with neighbors. The percentage of respondents indicating that they engage in these types of social activities with neighbors quite frequently (e.g., either several times a month or once a week or more) was highest among those living in the Main Street Adjacent segment of the study area (36%) and the area between Main Street and 300 East (32%), notably lower among those living adjacent to 300 East (24%), and lowest among respondents living in the area immediately to the west of Main Street and the area immediately to the east of 300 East (17% in both areas).



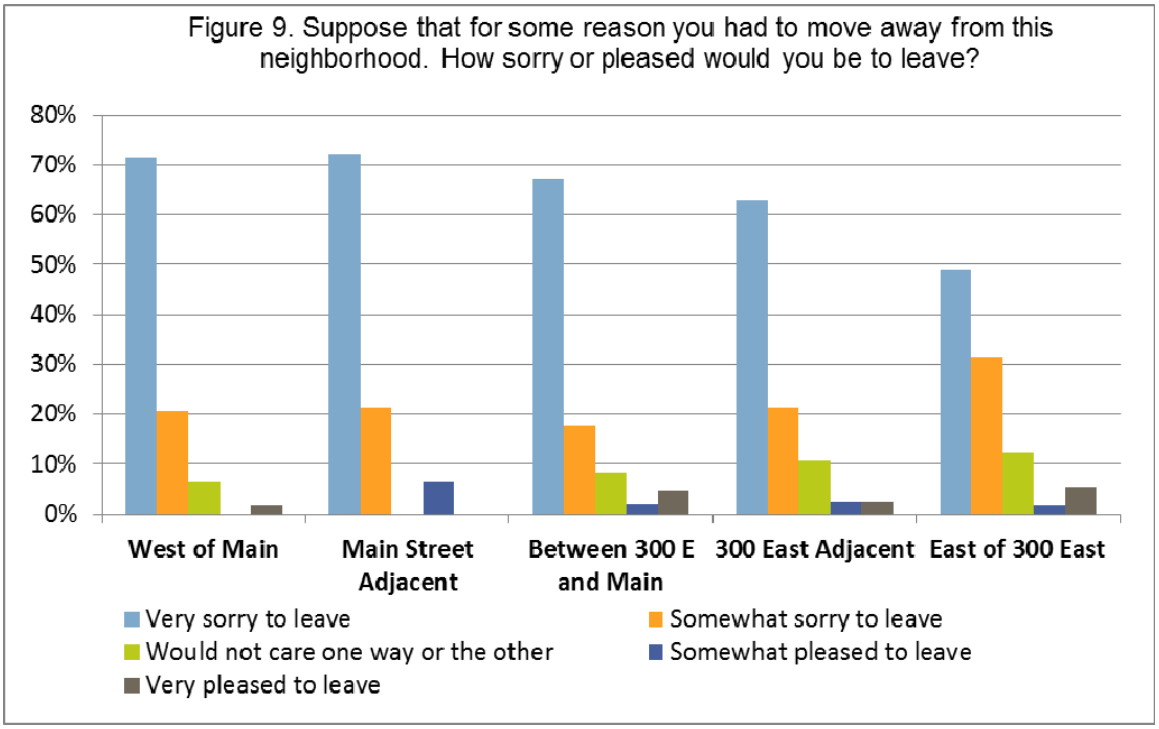
Engagement with nearby neighbors was also explored with a similar question that asked about socializing with neighbors living "across the street" from respondents' homes. Inclusion of this question is particularly relevant for those who live adjacent to the Main Street corridor or the 300 East corridor, since implementation of an alternative involving either of those corridors could be expected to impinge on the ability to engage with neighbors located on the opposite side of what would become a much more heavily-traveled transportation artery. Looking specifically at responses from those two study area segments, it is clear that socializing with neighbors located across the street occurs much less frequently among respondents who live adjacent to the 300 East corridor than is the case for those living adjacent to Main Street. For the 300 East Adjacent segment nearly half (48%) of respondents said they "never or almost never" engage in informal socializing with neighbors located across the street from their homes, and only 17% said they do so as often as several times a month or once a week or more. In contrast, far fewer respondents living in the Main Street Adjacent segment said they never or almost never engage in social activities with neighbors who live across the street (23%), while in combination nearly one-third said they do so either several times a month (15% of responses) or once a week or more (17%). Clearly, engagement with neighbors living across the street is far more prevalent among residents who live adjacent to Main Street than is the case for those living adjacent to 300 East. This difference may be due at least in part to the configuration of local wards of the Church of Jesus Christ of Latter Day Saints (LDS). Although ward boundaries extend along the northern portion of the Main Street corridor, residential neighborhoods located on both the east and west sides of Main Street between Telegraph Street and 200 North are included in the same ward. Ward boundaries that encompass the 300 East corridor include both sides of the southern portion of that corridor between Telegraph Street and approximately 150 North, but that is an area characterized by considerable non-residential land use along the east side of the corridor. In areas extending farther to the north from 150 North to I-15 the LDS ward boundaries are aligned with 300 East, and as such may tend to reduce levels of familiarity and interaction among church members who live on the east and west sides of the roadway.



Because expectations regarding residential stability or relocation are closely linked to community attachment and cohesion, survey participants were also asked whether they expect to move away from their current home within the next two to three years. Response patterns summarized in Figure 8 reveal that very few residents living in any portion of the study area anticipate that they "definitely WILL move" away from their current home within that time period. Indeed, across all of the study area segments 10% or fewer of survey participants selected the "definitely WILL move" response choice. The highest percentage of "definitely WILL NOT move" responses was observed among persons living in the study area segment located immediately to the west of Main Street (52%), followed by those living in the Main Street Adjacent (47%) and 300 East Adjacent (45%) areas. Slightly lower percentages of residents living in the area between Main Street and 300 East (42%) and in the area immediately to the east of 300 East (36%) stated that they definitely do not expect to move away from their homes within the next two to three years. These response patterns suggest that residents throughout the study area generally feel well-established in their current homes, and in most cases plan to remain in place for the foreseeable future.



Finally, as a measure of overall community attachment we asked survey participants to indicate how sorry or pleased they would be to leave their neighborhood if for some reason they had to move away. As is indicated in Figure 9, most respondents living throughout the study area said they would be "very sorry to leave" their neighborhood (65% of survey participants overall). The percentage of respondents selecting the "very sorry to leave" answer to this question was highest among those living in the Main Street Adjacent segment of the study area (72%) and the West of Main Street segment (71%), slightly lower among those living in the area between Main Street and 300 East (68%) and the 300 East Adjacent segment (63%), and notably lower among residents of the area located immediately to the east of 300 East (49%). While these response patterns do reveal variation in levels of attachment across the five study area segments, in general they also indicate that attachment to the local neighborhood is high throughout the area.



Taken as a whole, response patterns involving this series of survey questions indicate that localized social interaction, social cohesion, neighborhood involvement, and levels of attachment are broadly evident throughout the study area. At the same time, such locality-based social ties and attachments appear to be most pronounced among residents whose homes are located in the Main Street Adjacent segment. When compared to those who live in other portions of the study area, respondents living in the Main Street Adjacent segment had lived for more years in their current homes, were among the most likely to report the presence of relatives living in the neighborhood and to know a substantial number of nearby neighbors, to report a larger number of close friends living in the neighborhood, and to engage more often in social activities involving neighbors. Main Street Adjacent residents were also most likely to indicate that they

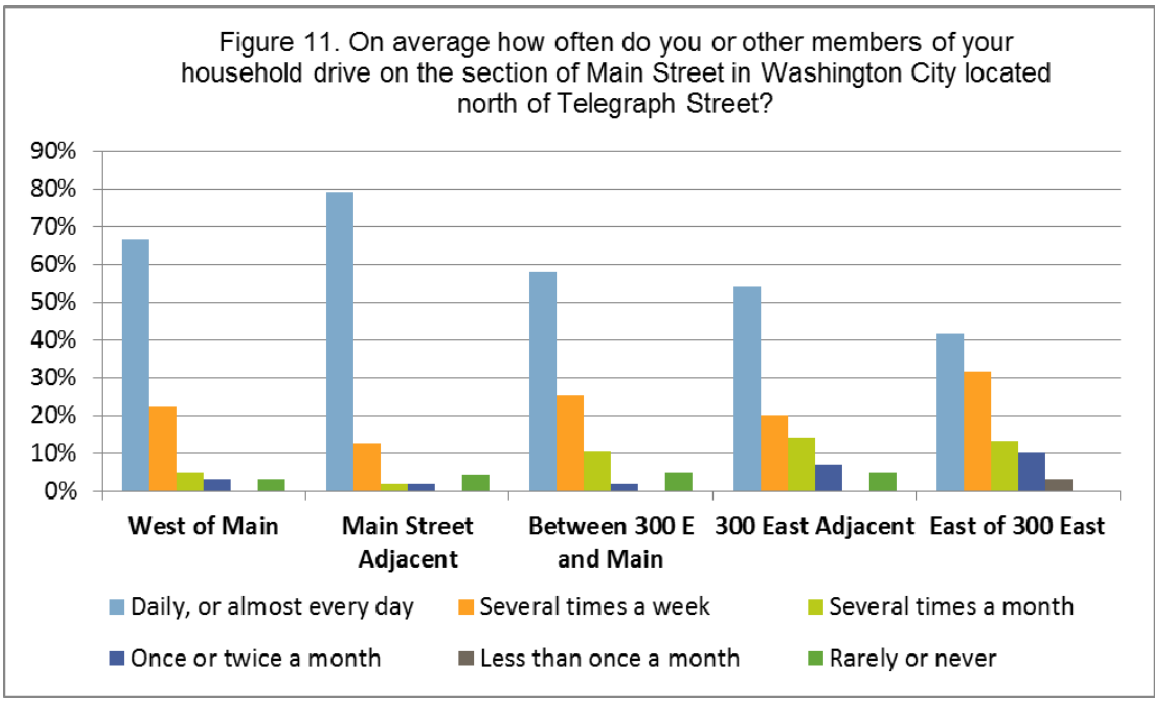
would be very sorry to leave the neighborhood where they currently live. In short, neighborhood-level attachment, engagement, and social cohesion levels appear to be more strongly established in the Main Street Adjacent segment than is the case in other portions of the study area.

Local-Area Driving and Activity Patterns

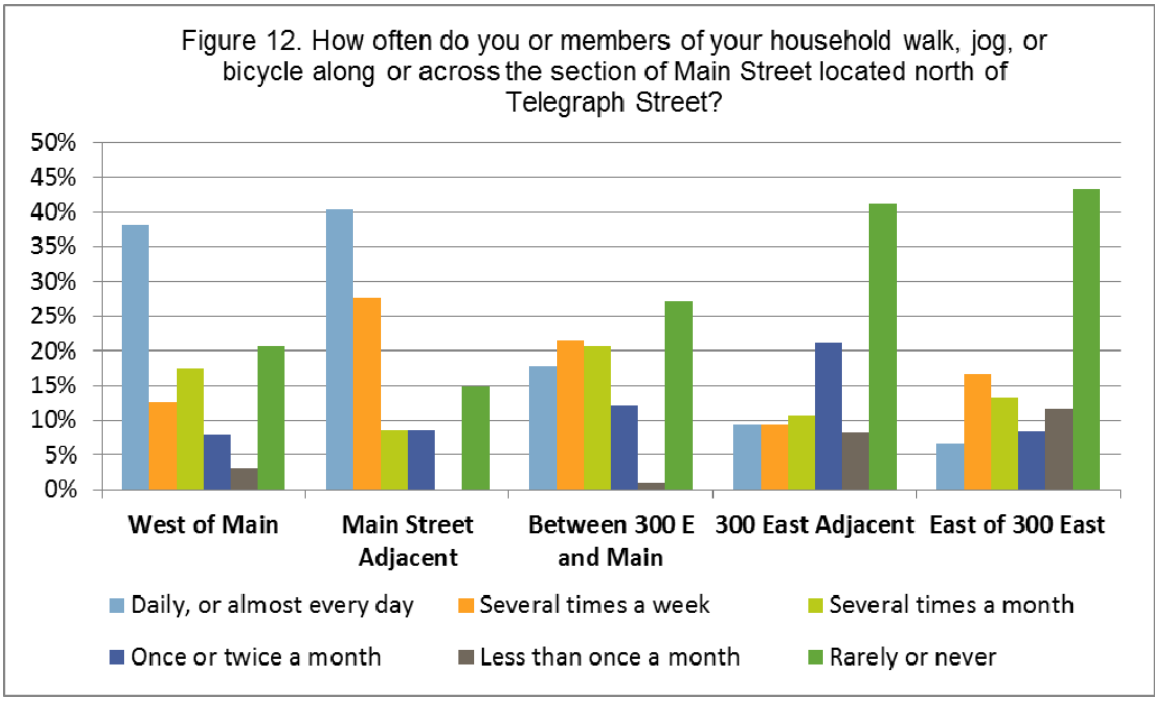
Several survey questions were designed to address the extent to which study area residents engage in driving or other outdoor activity patterns in or near their homes, including in particular activities and uses that involve the two primary road corridors (Main Street and 300 East) that could be subject to modification and increased traffic flows based on construction alternatives currently under consideration.

The first question to address these issues asked respondents how often they get out in their neighborhood for a walk, jog or bicycle ride that takes them farther than one block from their home. Across all five study area segments relatively few respondents (2% to 8%) reported that they "never or almost never" engage in such activities (Figure 10). Conversely, a substantial majority of respondents throughout the study area said they do such things fairly frequently -- either several times a month or once a week or more (a combined 60% of responses from the West of Main Street segment, 69% among those living in the Main Street Adjacent segment, 76% of responses from the segment located between Main Street and 300 East, 69% of those living in the 300 East Adjacent segment, and 62% among respondents living in the area immediately to the east of 300 East).

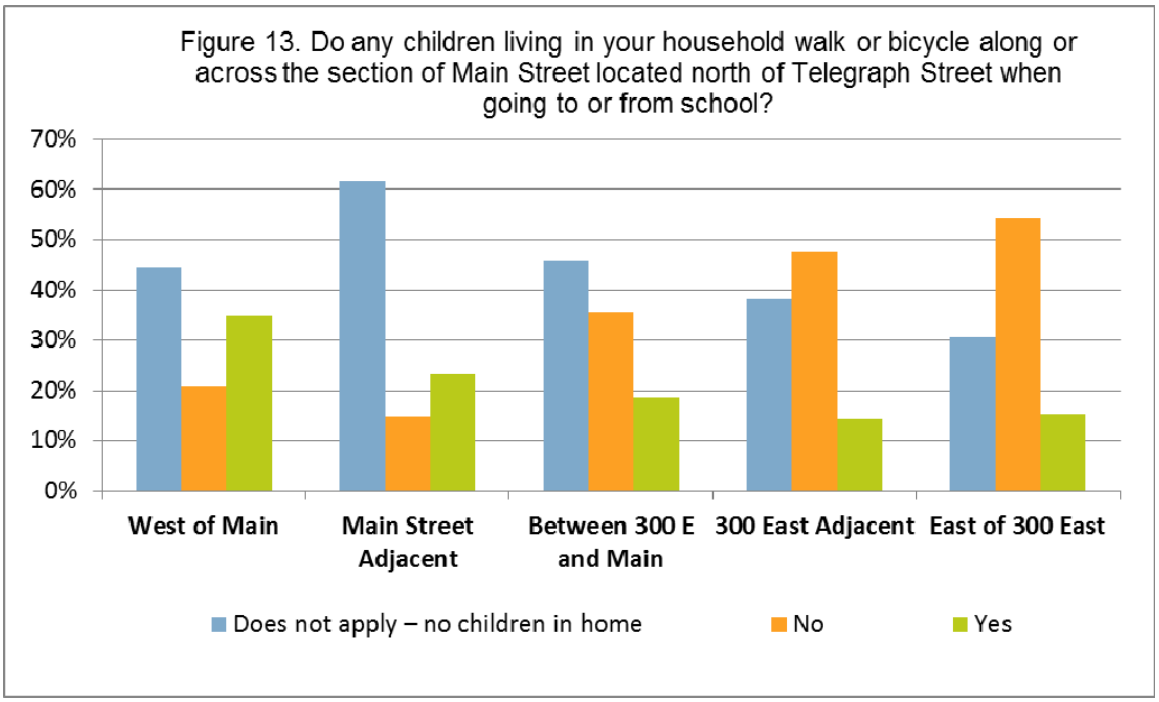
Respondents were also asked several questions involving the extent to which they or other members of their households engage in uses and activities that involve the Main Street corridor specifically. As indicated in Figure 11, respondents living throughout the study area reported that they or other household members drive on the portion of Main Street located between Telegraph Street and I-15 quite frequently. Not surprisingly those living immediately adjacent to Main Street were most likely to report driving on Main Street daily or nearly every day (79% of responses). At the same time, it is important to note that more than half of respondents living in the West of Main Street segment of the study area (67%), the segment located between Main Street and 300 East (58%), and the 300 East Adjacent segment (54%) also reported that they or other household members drive on that portion of Main Street daily or almost every day. Only in the most distant study area segment located immediately to the east of 300 East did fewer than half of survey participants report such frequent use of the Main Street corridor, and even there the "daily or almost every day" response was selected most often (42% of responses).



The next question in this series asked how often survey participants and other members of their households walk, jog or bicycle along this section of Main Street. Response patterns summarized in Figure 12 reveal that such uses were reported with considerable frequency by respondents living in areas adjacent to or near to Main Street, and less often by those living at greater distance to the east. Not surprisingly, engagement in these types of activities along the Main Street corridor was reported most frequently by individuals whose homes are located immediately adjacent to Main Street, with more than two-thirds (68%) of respondents from that study area segment indicating that they do so either several times a week or daily/nearly every day. Respondents living in the nearby neighborhoods located immediately to the west of Main Street also reported frequent engagement in such activities along Main Street, with more than half (51%) reporting that they do so several times a week or more often. Use of the Main Street corridor for walking, jogging or bicycling was reported at lower frequency by residents of the area located between Main Street and 300 East (a combined 40% reported that they do so several times a week or daily/nearly every day), and much less often by those living adjacent to 300 East (a combined 28% of responses) or in the area immediately to the east of 300 East (24% of responses).



Respondents were also asked to indicate the extent to which children living in their homes walk, jog or bicycle along or across Main Street when going to or from school. Response patterns summarized in Figure 13 indicate that such activities involving school children were reported most often by survey participants living in the neighborhoods located immediately to the west of Main Street (35% of responses from that segment), and slightly less often by respondents living immediately adjacent to Main Street (23% of respondents). The lower percentage of "yes" responses among those living adjacent to Main Street can be accounted for in large part by the much greater percentage of households in that study area segment in which no children are present in the home. Not surprisingly, such uses of the Main street corridor involving school-age children were reported at considerably lower frequency by persons living in areas farther to the east (19% of responses among those living in the area between Main Street and 300 East, 14% for the 300 East Adjacent segment, and 15% for the area located immediately to the east of 300 East). Since the public elementary school serving residents of the study area is located on 300 East, and since schools serving older age groups are located outside of the study area, such differences in response across segments of the study area would be expected. While the fact that modest numbers of respondents living in areas adjacent to or east of 300 East did report use of the Main Street corridor by school children living in their households is somewhat surprising, such use patterns could reflect things like after-school visiting to the Main Street area or child care arrangements that have children from some homes in those more distant portions of the study area traveling to or across the Main Street corridor before or after school sessions.



This same series of questions regarding driving as well as non-driving use patterns was repeated to assess the extent to which area residents engage in activities involving the 300 East corridor. Response patterns summarized in Figure 14 indicate that the frequency with which survey participants or other members of their households drive on that section of 300 East varies considerably across the five study area segments. Very large majorities of respondents living in the area immediately to the east of 300 East (93%) and in the 300 East Adjacent segment (85%) reported that they or other household members drive on 300 East either daily/every day or at least several times a week. As would be expected the frequency of such use is lower in study area segments located farther to the west, though it is important to note that majorities of respondents living in the area between Main Street and 300 East (76%) and the area immediately to the west of Main Street (59%) also reported driving on that section of 300 East either daily/nearly every day or at least several times a week. In contrast, only 40% of those living in the study area segment adjoining Main Street reported such frequent use of the 300 East corridor, a difference that can undoubtedly be accounted for in part by the lower percentage of households in that portion of the study area in which children (some of whom may be driven to/from the elementary school located on 300 East) are present. Still, it is apparent that many residents throughout the study area do regularly drive on the portion of 300 East located north of Telegraph Street. Given the locations of both the local elementary school and a large community recreation center along that corridor, such use patterns are not unexpected.

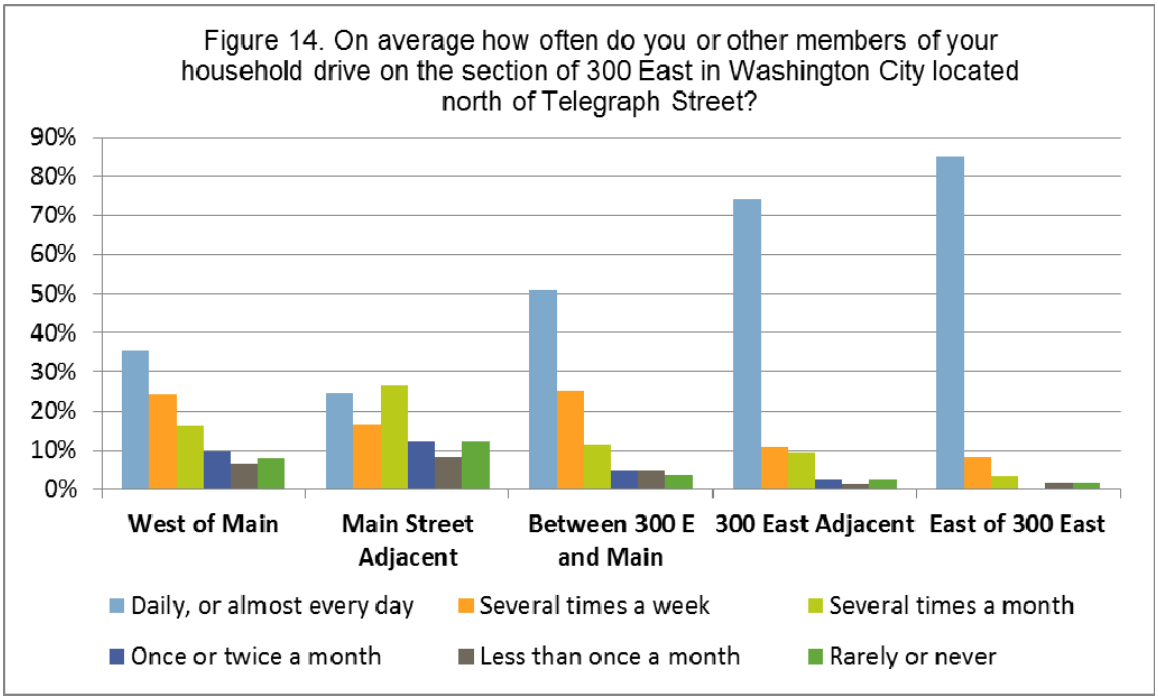
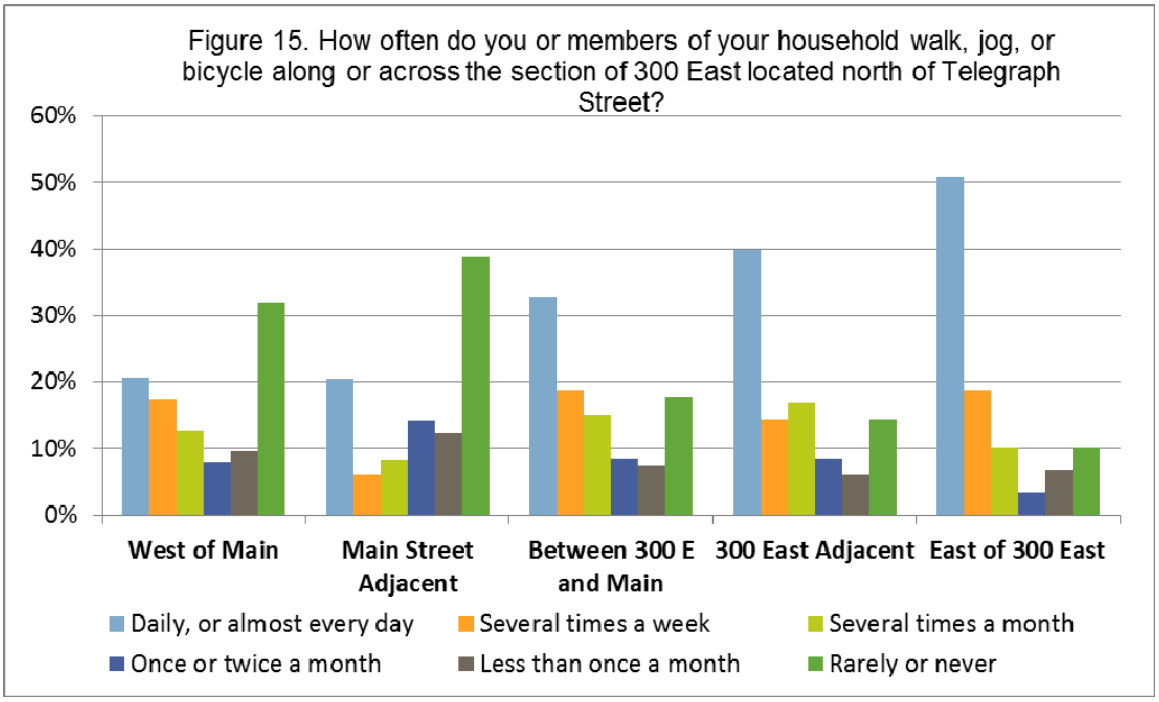
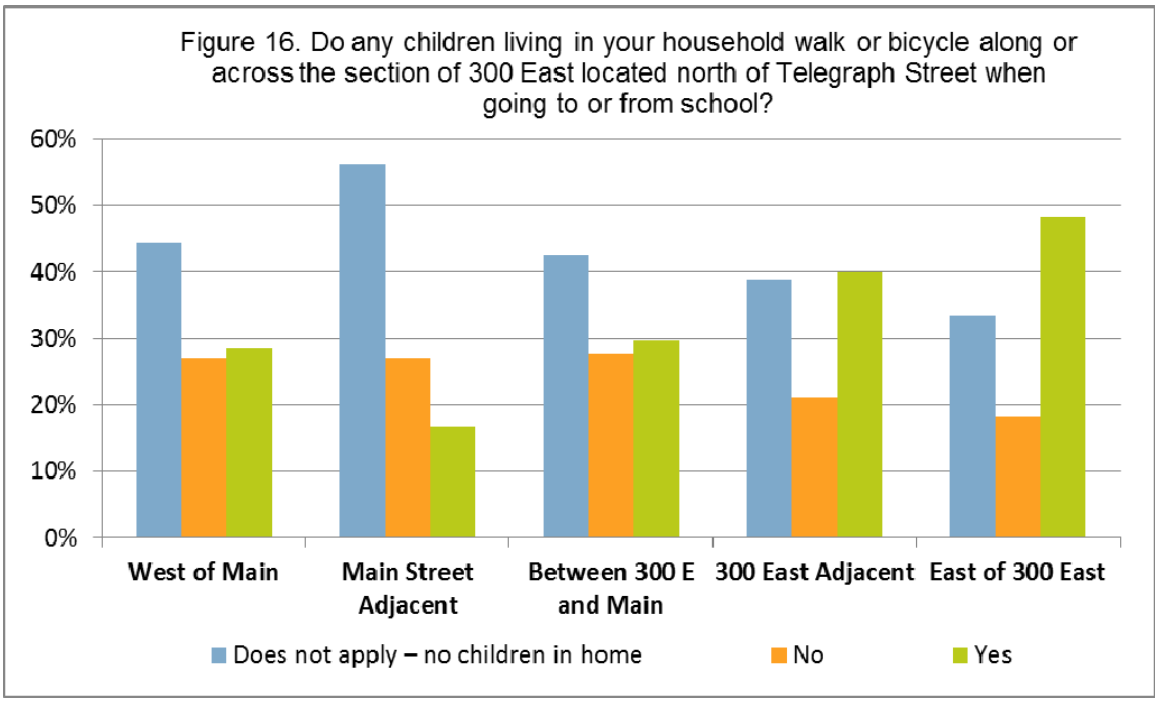


Figure 15 summarizes responses to a question addressing the extent to which survey participants reported that they or other household members walk, jog or bicycle along or across the section of 300 East that is situated within the study area. Not surprisingly, such non-driving use patterns were reported most often by respondents living adjacent to the 300 East corridor (where a combined 64% indicated that they or other household members engage in such uses either daily/nearly every day or at last several times a week) or in the nearby neighborhoods located immediately to the east of 300 East (where 70% reported non-driving use of the corridor that frequently). Engagement in these types of non-driving uses of the 300 East corridor was reported slightly less often by residents living in the area between Main Street and 300 East (where a combined 52% of respondents reported such use daily/nearly every day or several times a week), and less frequently by those living in the Main Street Adjacent segment (26%) and the segment located immediately to the west of Main Street (38%).



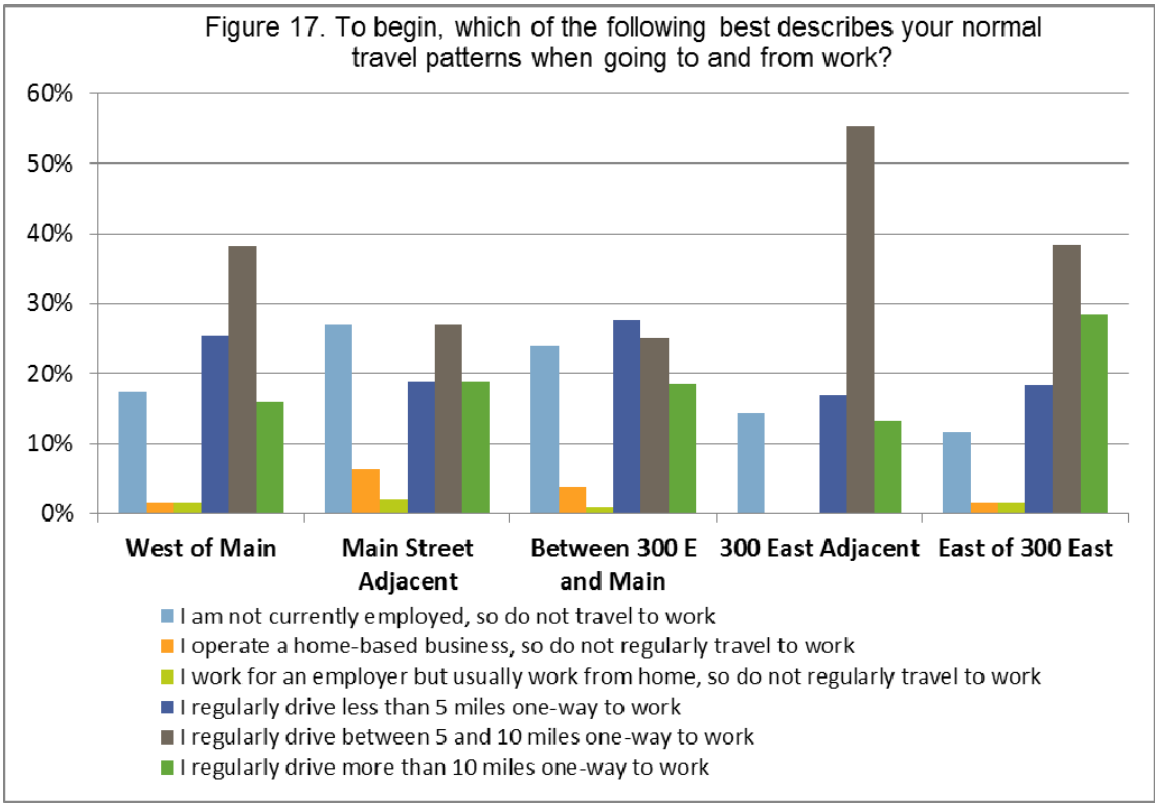
Responses to a question focused on the extent to which school children walk or bicycle along or across 300 East when going to or from school are outlined in Figure 16. For the combined study area as a whole, one-third (33%) of respondents indicated that a child or children living in their households do traverse the 300 East corridor as they go to or from school. The percentage of responses indicating such use by school-age children was highest for the neighborhoods located immediately to the east of 300 East (48% of responses) and the 300 East Adjacent segment of the study area (40% of responses). Lower percentages of survey participants living in the area between Main Street and 300 East (30%), the Main Street Adjacent segment (17%), and the area immediately to the west of Main Street (29%) reported use of the 300 East corridor by school-age children, reflecting both the greater distance at which those neighborhoods are located from the elementary school on 300 East and the fact that respondents from those areas were less likely to report the presence of children living in their households.



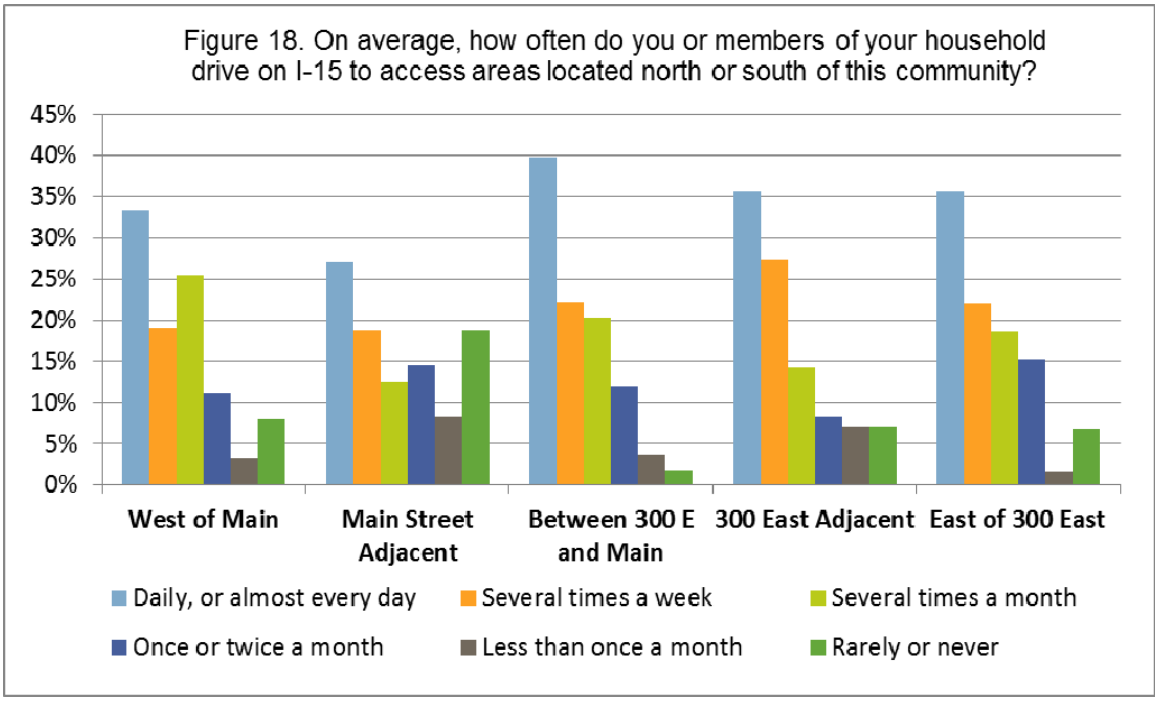
Commuting Patterns, I-15 Usage, and Residents' Views About Traffic Conditions

Several survey questions were designed to assess area residents' daily commuting patterns, their use of nearby portions of I-15, and their views about current traffic conditions and problems involving the I-15 Interchange at Green Springs Drive that currently provides the nearest point of access to or from I-15 for study area residents.

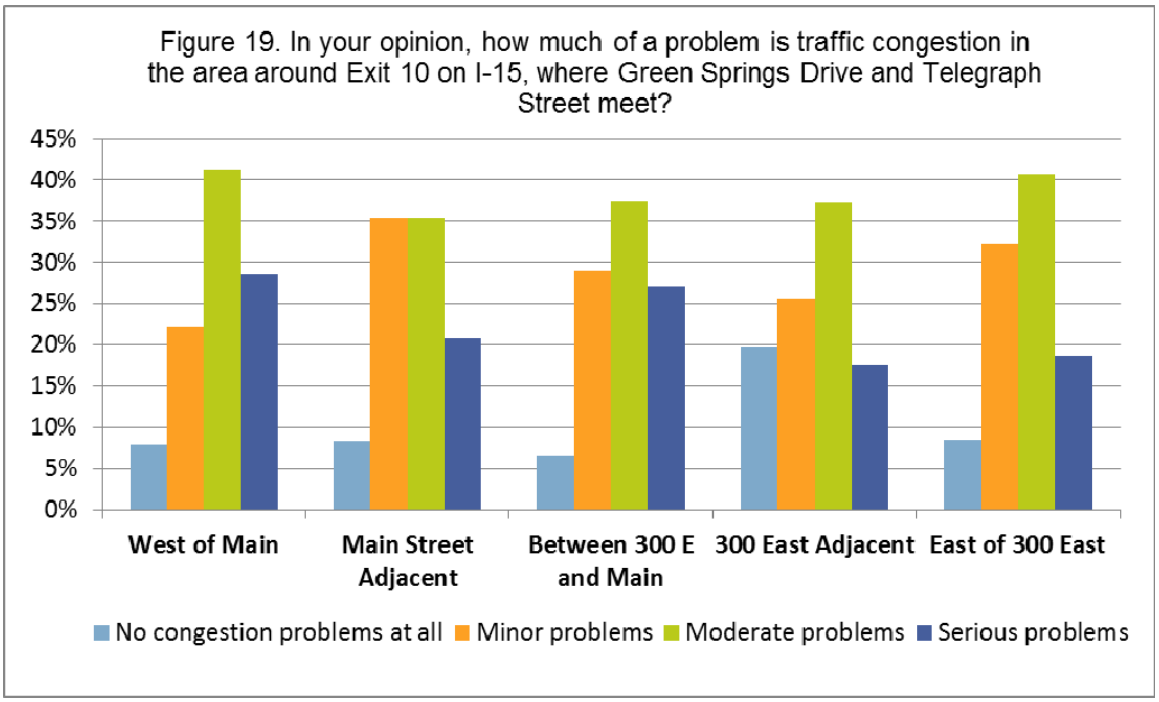
The first of these questions asked about survey participants' normal travel patterns when going to and from work. As is indicated by response patterns summarized in Figure 17, respondents who work outside of their home were most likely to report a one-way commuting distance of between five and ten miles. That response choice was most common among residents living in four of the five study area segments (38% of responses for the segment located west of Main Street, 27% of responses from the Main Street Adjacent segment, 55% for those living adjacent to 300 East, and 38% for the East of 300 East segment). Survey participants living in the segment located between Main Street and 300 East were slightly more likely to report a commuting distance of under five miles (28% of responses), with nearly as many (25%) reporting that their daily commute involves a distance of five to 10 miles. Across the study area it is apparent that most of those who work outside of their homes commute for a distance of five miles or more to their places of employment.



Response patterns summarized in Figure 18 reveal that most residents of the study area make regular use of nearby portions of I-15 in order to access areas located to the north or south of Washington City. For the study area as a whole, a combined 57% of respondents indicated that they and/or other household members drive on I-15 either daily or almost every day (35% of responses) or at least several times a week (22%). Across the individual study area segments the percentage of respondents indicating that they or household members drive on nearby portions of I-15 that frequently was lowest among those living in the Main Street Adjacent segment (46%), somewhat higher among those located in the area immediately to the west of Main Street (52%) and the East of 300 East (58%) segment, and highest for those living in the area between Main Street and 300 East (62%) and immediately adjacent to the 300 East corridor (63%).



Survey participants were also asked to indicate whether they consider traffic congestion to be a problem in the area around Exit 10 on I-15 where Green Springs Drive and Telegraph Street meet. For the combined study area overall, 38% of respondents said they consider congestion at that location to be a moderate problem, while 28% said it represents a minor problem and 23% considered congestion at that location to be a serious problem. The "moderate problems" answer to this question was also selected most often across each of the individual study area segments, ranging from a low of 35% of responses among survey participants whose homes are located in the Main Street Adjacent segment (where an equal number of respondents selected the "minor problems" answer) to a high of 41% among those living in the segment located immediately to the west of Main Street and in the area immediately to the east of 300 East. Fewer than 10% of respondents whose homes are located in the West of Main Street, Main Street Adjacent, Between Main Street and 300 East, and East of 300 East segments indicated that they believe there are "no congestion problems at all" in the vicinity of the Exit 10 interchange. In contrast, one-fifth of respondents living in homes that directly adjoin the Main Street corridor selected the "no congestion problems at all" answer to this question. The lower level of concern about traffic congestion in the area around Exit 10 expressed by respondents who live adjacent to the Main Street corridor may be accounted for in part by the fact that residents of that study area segment were more likely to report that they are not currently employed or do not regularly travel away from home for work. As such, residents of that area would be less likely to regularly encounter traffic congestion problems that do occur at and near to the Exit 10 location.



What do area residents think about possible consequences of the I-15 Interchange project?

An additional series of questions focused on study area residents' views about potential impacts of the proposed I-15 MP 11 transportation improvement project. Survey participants were provided with an information sheet outlining general features of the project, and informed within the questionnaire that construction alternatives involving Main Street and 300 East locations were under consideration. They were then asked to provide their views about possible effects of those construction options, and also about possible effects of a "no action" alternative that would maintain existing highway infrastructure conditions in the project area. At the point in time when survey data were collected two additional construction alternatives involving reconfiguration of the existing I-15 Exit 10 interchange at Green Springs Drive and the construction of several thru-turns in areas located in the vicinity of that interchange had not been identified, and as a result survey participants were not asked to consider possible effects involving either of those alternatives.

What Do Area Residents Think About a New I-15 Interchange at Main Street**?**

Anticipation of effects for the community as a whole. The first question presented in this portion of the questionnaire asked survey participants to consider possible effects of a new I-15 interchange at the north end of Main Street for their "community as a whole." Although the pattern of response to this question varied across study area segments (Figure 20), there was a clear tendency for respondents to anticipate that implementation of this alternative would be more likely to have negative effects on the community than to have positive effects. For the overall study area about half (51%) of respondents selected the "very negative" effects response. And, while it is not surprising that concern about negative effects on the community was highest among those living adjacent to or nearer to Main Street, for all five study area segments the most common response was that construction of a Main Street interchange would have "very negative" community-wide effects (63% in the West of Main Street segment, 78% in the Main Street Adjacent segment, 41% in the Between Main Street and 300 East segment, 38% in the 300 East Adjacent segment, and 35% in the East of 300 East segment). Only a relative handful of respondents (2% to 15% depending on the study area segment) anticipated that "very positive" community-wide effects would accompany implementation of a Main Street alternative.

Anticipation of effects for the local neighborhood. Similar response patterns were observed when survey participants were asked to consider possible effects of a new I-15 interchange with Main Street for the neighborhood located within two blocks of their homes (Figure 21). Once again, for the overall study area slightly over half (52%) of respondents indicated that they would expect implementation of that alternative to have "very negative" effects on their neighborhoods. As was the case for the question addressing potential community-wide effects, the percentage of respondents selecting the "very negative" answer to this question was highest among those living immediately adjacent to Main Street (83%), considerably lower among those in non-adjacent neighborhoods located West of Main Street (65%) and between Main Street and 300 East (54%), and lower still among those living in the 300 East Adjacent segment (35%) and the area immediately to the east of 300 East (32%). Very few respondents in any part of the study area (and just 2% of those living adjacent to Main Street and none living in the area immediately to

the west of Main Street) said they would anticipate “very positive” effects on their neighborhood from development of a Main Street interchange.

Figure 20. If the proposed transportation actions occurred and involved connection of a new I-15 interchange with Main Street, what is your opinion about the effects this would have on your community as a whole?

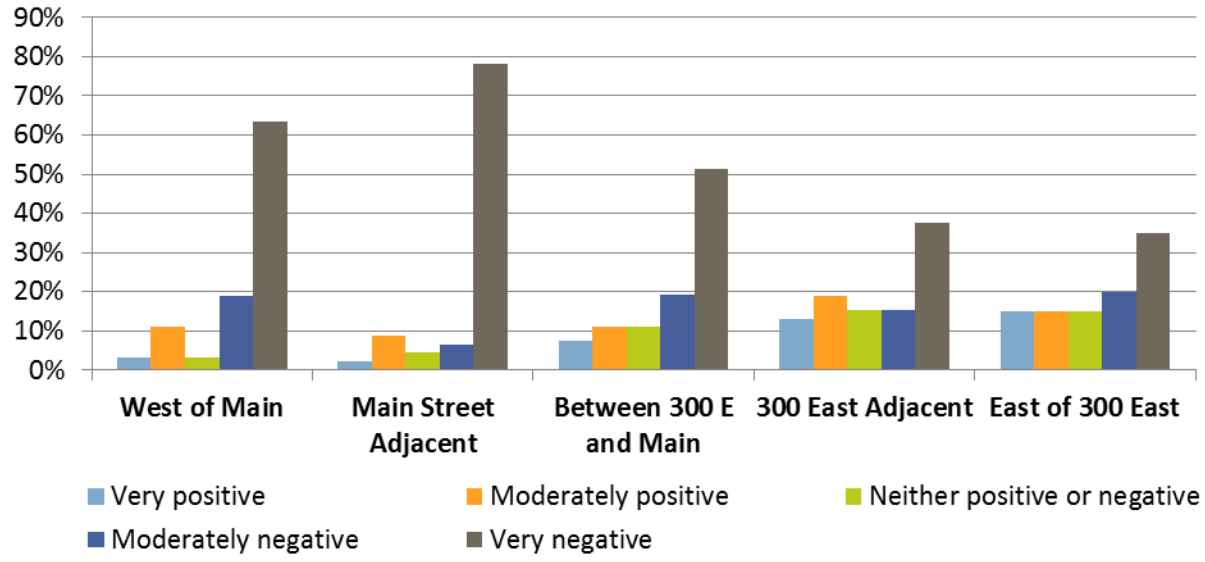
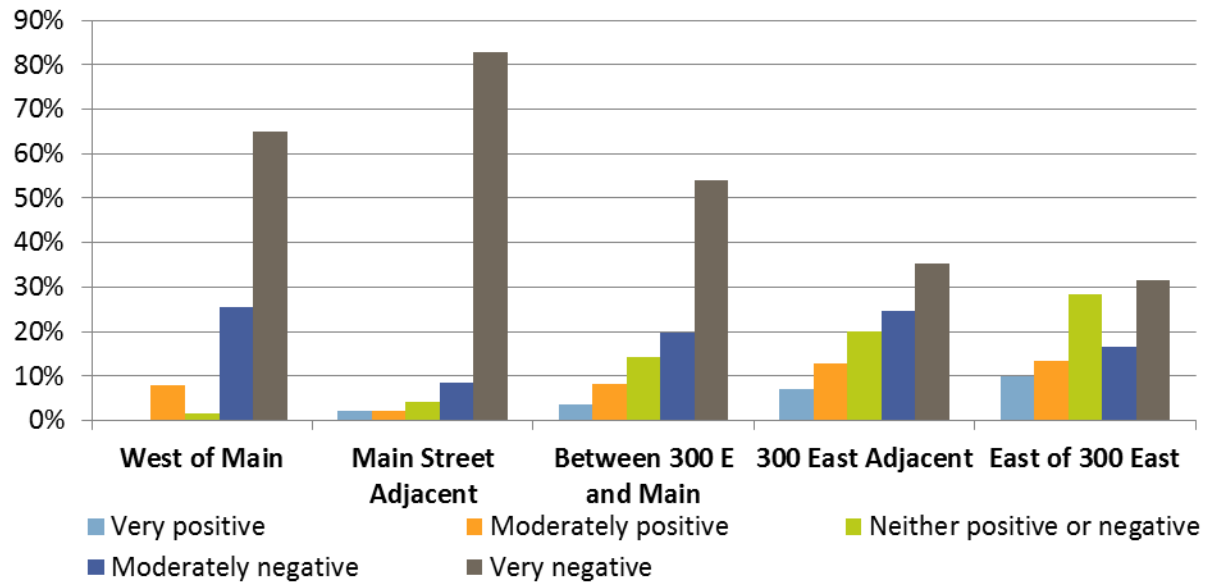
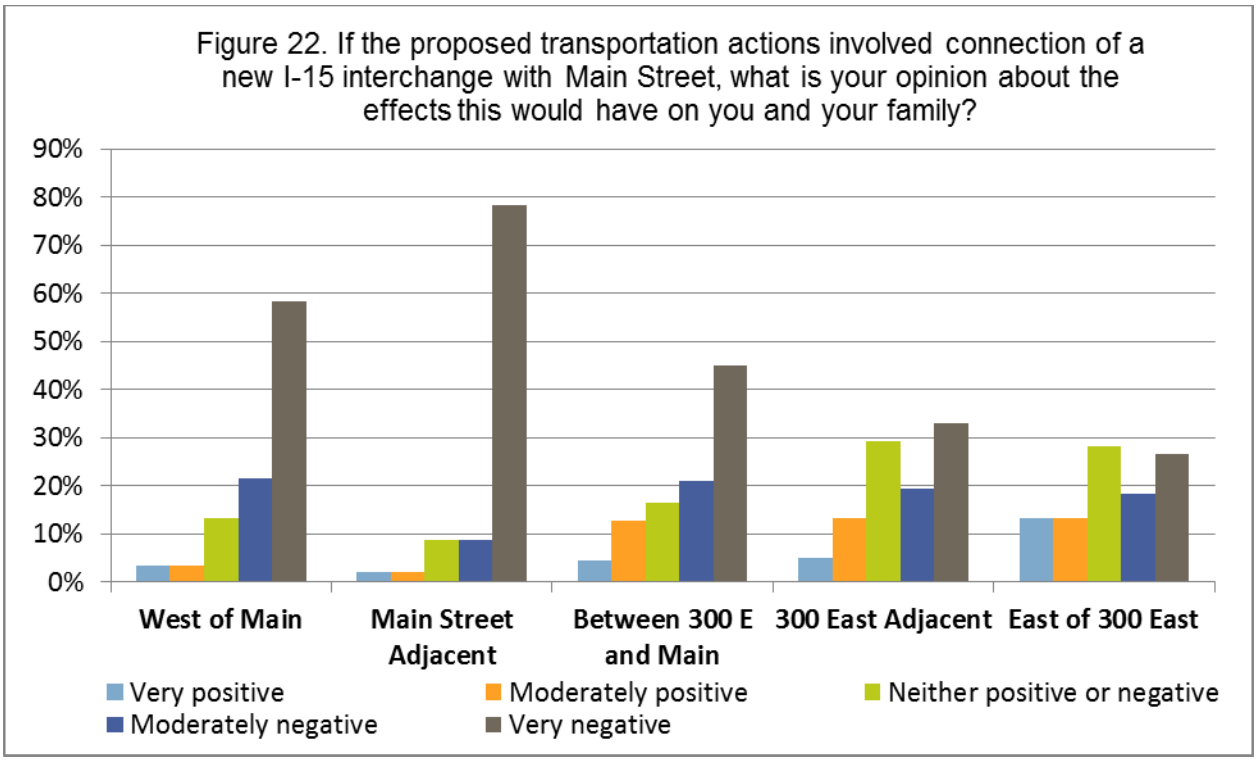


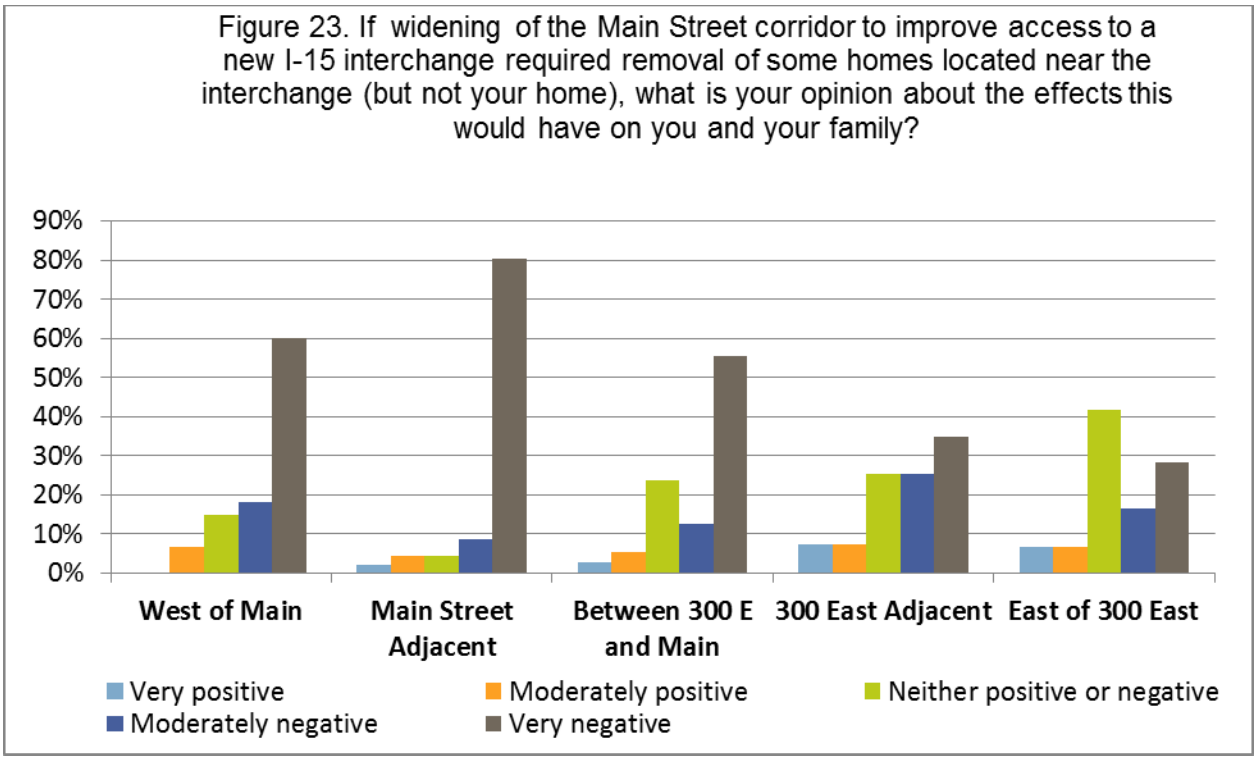
Figure 21. If the proposed transportation actions involved connection of a new I-15 interchange with Main Street, what is your opinion about the effects this would have on the neighborhood within 2 blocks of your home?



Anticipation of effects for respondents and their families. Respondents were also asked to consider potential effects of a new I-15 interchange at Main Street for themselves and members of their families. Response patterns outlined in Figure 22 reveal considerable variation in reactions to this question across the five study area segments. For the study area as a whole 46% of respondents indicated that they would anticipate "very negative" effects on themselves and/or family members, while only 6% anticipated that effects would be "very positive." Not surprisingly residents of the Main Street Adjacent segment were most likely to express concerns about possible negative effects, with nearly eight out of ten respondents (78%)from that area indicating that they believe a new Main Street interchange would have "very negative" effects on themselves and/or other family members. A majority (58%) of respondents living in the area immediately to the west of Main Street also selected the "very negative" answer to this question. Expectations that implementation of this alternative would generate "very negative" effects for respondents and their families were less widespread among those living in the neighborhoods between Main Street and 300 East (45% of responses), and lower still among those living in the 300 East Adjacent segment (33%) and the area immediately to the east of 300 East (27%). Still, it is noteworthy that anticipation of "very positive" effects was reported by only 13% of those living in the area most distant from Main Street (the East of 300 East segment), and by very few residents from other portions of the study area (ranging from 2% for the Main Street Adjacent area to 5% for the area between Main Street and 300 East as well as the 300 East Adjacent segment).



A similarly-structured question presented next in the survey instrument asked respondents to consider the effects a new Main Street interchange might have on themselves and/or members of their families if implementation of that alternative were to require removal of some homes located near to the interchange area, but not of their own home. Responses summarized in Figure 23 indicate that across each of the study area segments consideration of a scenario in which some corridor-adjacent homes would be removed was accompanied by a slight increase in the percentage of "very negative" responses. Once again the percentage of "very negative" responses was highest among those living adjacent to the Main Street corridor (80%), lower in the nearby neighborhoods immediately to the west of Main Street (60%) and the area between Main Street and 300 East (58%), and lower still among those located adjacent to the 300 East corridor (35%) or in neighborhoods immediately to the east of 300 East (28%). While the differences in response percentages for this question and the previous question are small, they nevertheless indicate that on the whole area residents tend to be at least slightly more concerned about negative effects that might be experienced by themselves or other members of their families when removal of some corridor-adjacent homes is taken into consideration. Given the generally high levels of community attachment and neighborhood-level social integration outlined earlier in this report, it is not surprising that survey participants' reactions to possible project effects become more negative when the potential relocation of some study area residents is mentioned.



Anticipated positive consequences of a Main Street interchange. The survey also included an open-ended question providing respondents with the opportunity to describe in their own words the most important positive consequences as well as the most important negative consequences they anticipate would result from implementation of transportation improvements involving a new Main Street interchange with I-15. While many survey participants chose not to write in answers to these open-ended questions, responses provided by those who did answer focused on several key themes.

For the study area as a whole, and for four of the five study area segments, the most common response regarding anticipated positive consequences of a Main Street interchange was "none," a reaction voiced by 94 individual respondents. Among those who did answer this "positive consequences" question, comments indicating that there would not be any positive consequences were provided by 56% of those located in the Main Street Adjacent segment, 42% of those living immediately to the west of Main Street, 39% of those located between Main Street and 300 East, 29% in the 300 East Adjacent segment, and 25% in the area immediately to the east of 300 East.

The most commonly-identified theme among respondents who did express an expectation that some positive consequences might accompany a Main Street interchange involved improved and easier access to I-15, a comment provided by 61 survey participants from the overall study area. Comments reflecting this "improved access" theme were volunteered by 34% of those located in the East of 300 East segment who provided a response, 29% of those located in the area between Main Street and 300 East, 25% in the 300 East Adjacent segment, 21% in the West of Main Street segment, and just 9% of respondents living directly adjacent to Main Street.

Another positive consequence mentioned nearly as frequently involved expectations that traffic congestion at the MP 10/Green Springs Drive area would be reduced, a theme highlighted in comments provided by 50 survey participants from throughout the study area. That theme was represented in 25% of the comments from respondents living adjacent to 300 East, 22% of those from the East of 300 East segment, 21% from the West of Main segment, 18% from the area between Main Street and 300 East, and 15% from the Main Street Adjacent segment.

The only other theme regarding positive consequences voiced by more than a very small handful of survey participants focused on the expectation that having a new I-15 interchange at Main Street would result in better traffic flows generally. For the study area as a whole 40 individuals provided a written comment reflecting an expectation that "better traffic flows" would result; such expectations were evident in 31% of comments provided by respondents located in the area just to the east of 300 East, 22% of those immediately adjacent to 300 East, 16% of respondents located to the west of Main Street, 10% of those living between Main Street and 300 East, and 9% of those located adjacent to Main Street. While some other potential positive consequences such as the ability to accommodate future growth and development and encouragement of additional commercial development were also mentioned by some respondents, none of these other topical themes were voiced by as many as 10 individuals from throughout the study area.

Anticipated negative consequences of a Main Street interchange. Responses to the open-ended question that provided survey participants an opportunity to identify what they believe would be the most important negative consequences of a Main Street interchange with I-15 generated a

larger number of written comments, and a broader array of themes. For the study area as a whole, 157 respondents provided a comment regarding anticipated negative consequences that revolved around what might be thought of as "traffic concerns," particularly increased traffic volumes in residential neighborhoods. Comments reflecting these "traffic concerns" issues were evident in 64% of the comments provided by respondents living adjacent to Main Street, 64% of those from the area immediately to the west of Main Street, 57% from the area between Main Street and 300 East, 40% from the 300 East Adjacent segment, and 55% of those located immediately to the east of 300 East.

Another frequently-mentioned theme regarding anticipated negative consequences of a Main Street interchange involved concerns about changes to the character, qualities and valued "amenities" that many local residents associate with their neighborhoods and more generally with the "Old Town" portion of Washington City. Comments indicative of this general theme included expressions of concern about a deterioration of the historic character of the local area, a loss of local traditions and culture, a busier and more congested local setting, potential relocation of neighbors and friends, disruption of valued patterns of social engagement and "community spirit," and a transition of what is currently a residential area into an area with more commercial business activity. Expressions of these types of concern were voiced relatively frequently across all five of the study area segments, and noted in comments provided by 53% of responding individuals from the area immediately to the east of 300 East, 48% of those located west of Main Street, 45% among from the area adjacent to 300 East, 44% from the area between Main Street and 300 East, and 33% from the area adjacent to Main Street.

Expressions of concern about negative impacts on residential properties and property owners were also addressed in many of the comments provided in response to this question. For the study area as a whole, 113 individual comments incorporated some reference to these "property impacts" concerns, which in most instances focused on issues involving removal of homes and possible reductions in property values. More than half (53%) of the comments volunteered by survey participants located in the Main Street Adjacent segment of the study area made note of such concerns, as did half (50%) of those volunteered by individuals living in the area immediately to the west of Main Street. These "property impacts" concerns were also noted with substantial frequency in written comments provided by respondents located in the 300 East Adjacent segment (38% of those who provided comments), in the area between Main Street and 300 East (36%), and in the area immediately to the east of 300 East (26%).

Safety concerns related to increased traffic levels, particularly for children and pedestrians, were noted in a total of 73 of the written comments addressing anticipated negative consequences of a Main Street interchange with I-15. These issues were raised in 36% of the comments provided by respondents living adjacent to Main Street, 34% of those from the area immediately to the west of Main Street, 26% from the area between Main Street and 300 East, 16% from the area adjacent to 300 East, and 21% of those living immediately to the east of 300 East.

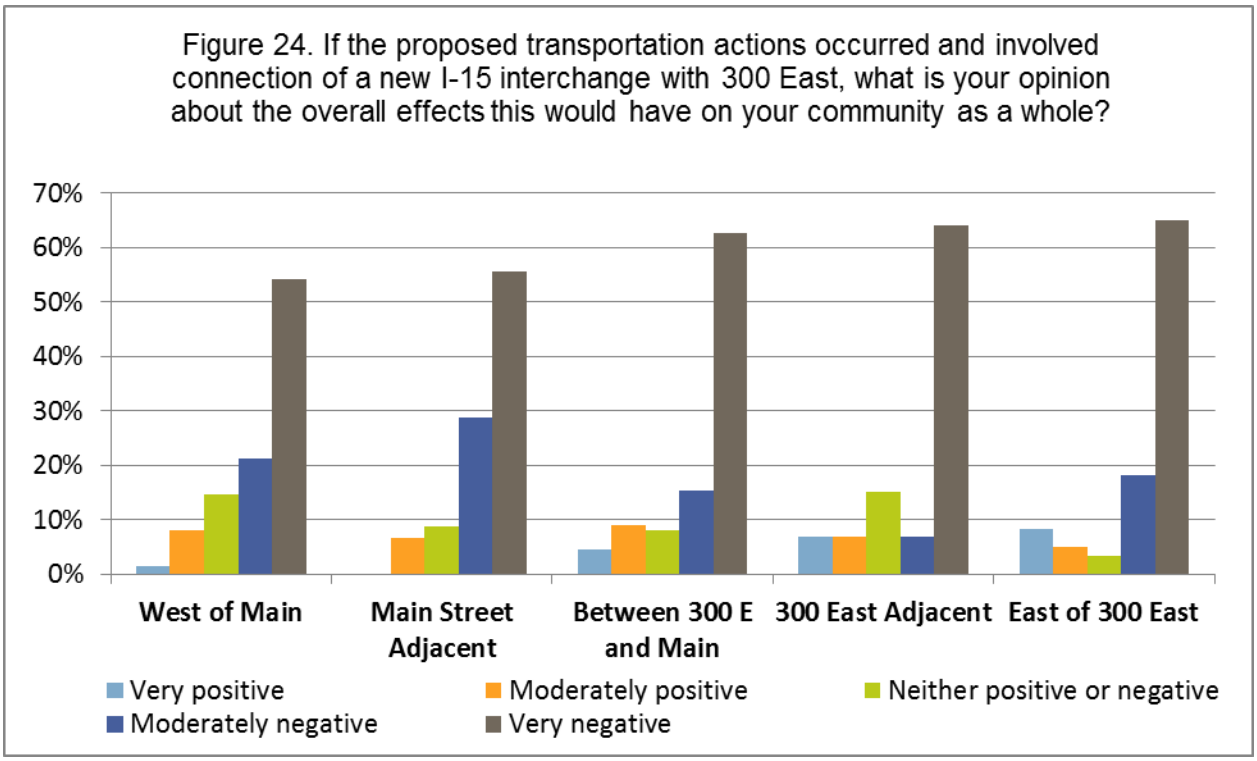
Noise impacts represent the only other issue of concern regarding anticipated negative impacts of a Main Street interchange that generated comments from more than 10% of survey participants who did provide a written response. A total of 48 individuals provided comments that included reference to concern about noise effects, primarily in relation to increased traffic volumes and

increased traffic proximity to residences. Expressions of concern about noise were evident in 29% of the comments provided by respondents located in the Adjacent to Main Street segment of the study area, and by 22% of those from the area immediately to the west of Main Street. Not surprisingly, concerns about noise effects were noted less frequently by those living in the area between Main Street and 300 East (present in 17% of comments), residents whose homes are adjacent to 300 East (10%), and those living to the east of 300 East (8%).

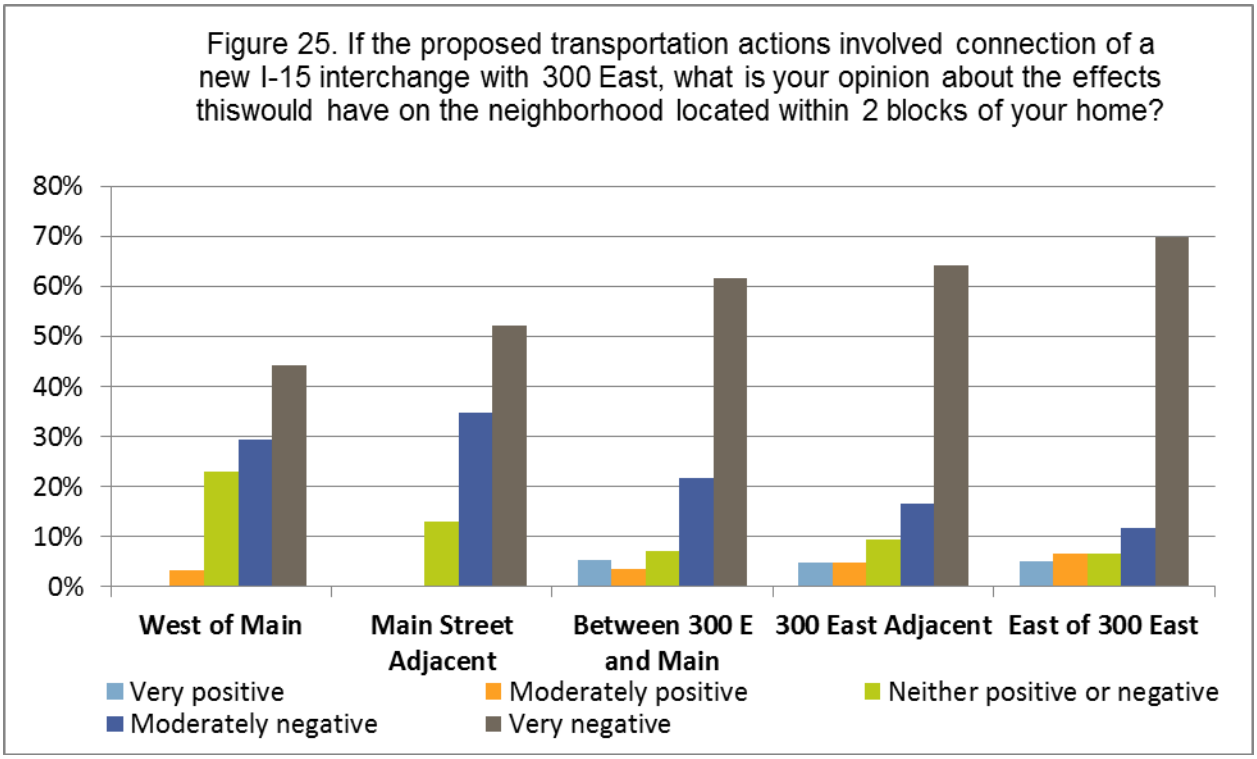
The only other issue of concern noted in comments provided by more than a relative handful of survey participants involved expectations that development of an I-15 interchange at the north end of Main Street could result in increased levels of crime in study area neighborhoods. Concerns involving crime issues were evident in comments provided by 25 survey participants from throughout the study area. Specific crime-related concerns included expressions of worry about a possible increase in the presence of transients and homeless persons, drug users, and drug dealers. Expressions of such concerns were noted in 12% of written comments provided by respondents living in both the Main Street Adjacent and Between Main Street and 300 East segments of the study area, 10% of those in the area immediately to the west of Main Street, 8% in the area immediately to the east of 300 East, and 2% of those whose homes are adjacent to 300 East.

Reactions to a New I-15 Interchange at 300 East

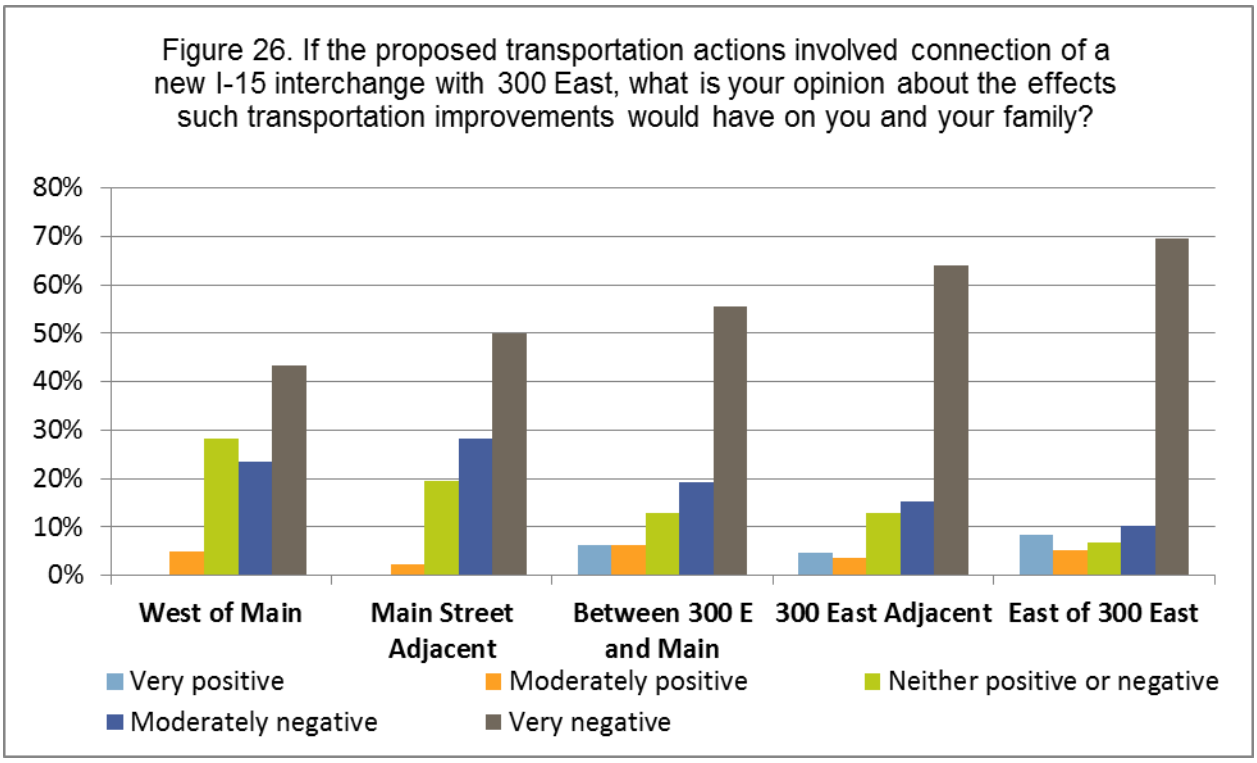
Anticipation of effects for the community as a whole. As was the case with questions addressing local residents' views about a Main Street interchange, several questions were presented that asked survey participants to comment regarding their expectations about effects of having a new I-15 interchange located at the north end of 300 East. The first of these questions asked respondents to consider possible effects of an interchange at that location for their "community as a whole." For the study area overall six out of ten respondents (61%) anticipated that having a new interchange at 300 East would have very negative effects on the local community. As indicated in Figure 24, expectations that community effects would be very negative were also widespread across each of the individual study area segments (65% of responses from the East of 300 East segment, 64% for the 300 East Adjacent segment, 63% for the Between Main Street and 300 East segment, 56% for the Main Street Adjacent segment, and 54% for the area immediately to the west of Main Street). On the whole, such responses indicate that, when compared to responses to a parallel question focused on a possible Main Street interchange (see Figure 20), study area residents tend generally to anticipate a higher likelihood of negative effects on the community if an interchange were to be developed at the 300 East location.



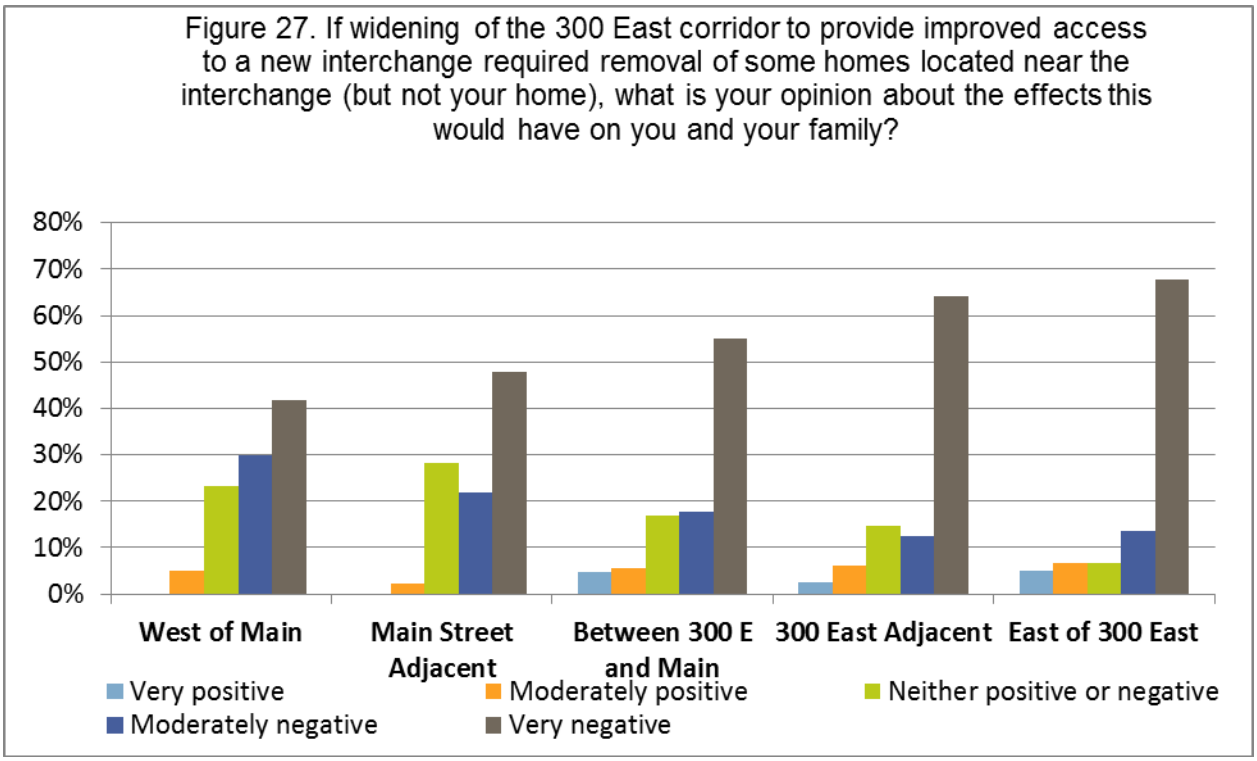
Anticipation of effects for the local neighborhood. The next question in this series asked survey participants to consider possible effects of a 300 East interchange on the local neighborhood area within 2 blocks of their homes. For the study area overall 60% of respondents indicated that they anticipate "very negative" effects for their neighborhoods if that transportation improvement action were to be implemented. It is worth noting that this area-wide percentage is higher than the 52% of "very negative" responses reported above for a parallel question focused on the prospect of a Main Street interchange. While the "very negative" response choice was selected most frequently by respondents from each of the five study area segments, the percentage of such responses varied considerably across segments. Not surprisingly, those living in areas nearer to 300 East were considerably more likely to anticipate "very negative" neighborhood effects (70% of responses from the East of 300 East segment, 64% from the 300 East Adjacent segment, and 62% from the Between Main Street and 300 East segment) than were respondents located at greater distance from 300 East (52% for the Main Street Adjacent segment and 44% for the West of Main Street segment).



Anticipation of effects for respondents and their families. When asked to consider possible effects of a 300 East interchange on themselves and members of their families, most study area respondents indicated that they thought effects would be "very negative" (57% for the study area overall). Once again anticipation of "very negative" effects was more widespread among those whose homes are located nearer to the 300 East corridor, with 69% of respondents from the East of 300 East segment and 64% of those from the 300 East Adjacent segment selecting that response option. Anticipation of "very negative" effects on respondents and other family members was somewhat lower for the Between Main Street and 300 East segment (55%) and the Main Street Adjacent segment (50%), and lowest for those living in the area immediately to the west of Main Street (43%). Across all study area segments there were very few respondents who indicated that they would anticipate positive effects from the development of a 300 East interchange for themselves or family members.



Responses to a similar question about effects of a 300 East interchange on respondents and their families if that action were to require removal of some homes (but not their own home) are summarized in Figure 27. For the overall study area 56% of responses to this question fell into the "very negative" category. Once again the percentage of "very negative" responses was highest among residents living in the neighborhoods located immediately to the east of 300 East (68%) and in the 300 East Adjacent segment (65%), slightly lower among those located in the area between Main Street and 300 East (55%), and lower still among residents whose homes are adjacent to the Main Street corridor (48%) or located in the area immediately to the west of Main Street (42%).



Anticipated positive consequences of a 300 East interchange. When provided with an opportunity to state in their own words what they thought would be the most important positive consequences of having a new interchange located at 300 East respondents from throughout the study area were, as was the case for a parallel question regarding location of an interchange at Main Street, most likely to say that they thought there would not be any positive effects. For the study area as a whole 97 respondents provided an answer indicating expectations that there would be no positive effects. Such expectations were referenced in 52% of the comments provided by respondents living adjacent to Main Street, 47% of those from the 300 East Adjacent segment, 44% from the area between Main Street and 300 East, 39% from the area east of 300 East, and 25% from the area west of Main Street.

Although fewer respondents provided comments identifying what they believe would be positive consequences of an interchange at 300 East, several themes regarding possible beneficial effects did emerge from responses to this question. The most commonly-identified positive effect involved an expectation that the presence of a new interchange at that location would result in improved access to/from I-15, a theme included in comments provided by 46 individuals from across the study area who provided a response to this question. Comments indicative of this "improved I-15 access" expectation were included in 27% of the responses provided by residents located in the area east of 300 East, 23% from the area between Main Street and 300 East, 20% from the area west of Main Street, 13% from the 300 East adjacent segment, and 10% from the Main Street Adjacent segment.

The next-most frequently expressed theme regarding potential positive effects of a 300 East interchange location focused on improved access for persons who drive to or from the Washington Fields area located south of the study area. That theme, expressed in comments provided by a total of 39 individual respondents, was included in 32% of comments from residents of the Main Street Adjacent segment, 21% of those from the East of 300 East segment, 16% from the 300 East Adjacent segment, 13% from the area between Main Street and 300 East, and 10% of comments from those living in the area immediately to the west of Main Street.

Another positive effects theme noted by more than a handful of survey participants involved expectations that an I-15 interchange at 300 East would help to ease congestion problems involving the existing Milepost 10 (Green Springs Drive) interchange. Such expectations were referenced in 26 of the written comments provided by respondents from across the study area. Comments indicative of this theme were included in 18% of responses provided by residents of the area immediately to the west of Main Street, 16% of those from the 300 East Adjacent segment, 9% from both the East of 300 East segment and the area between Main Street and 300 East, and 0% of comments from residents whose homes are adjacent to Main Street.

The only other positive effects theme that was addressed in more than 10 comments from the study area overall involved an expectation that traffic flows in general would be improved if an I-15 interchange was established at 300 East; that theme was included in comments provided by a total of 25 individuals. The relative frequency with which this "improved traffic flow" expectation was referenced by those commenting about positive effects was similar across the 300 East Adjacent segment of the study area (included in 13% of comments), the area immediately to the east of 300 East (12%), the area between Main Street and 300 East (12%),

and the area immediately to the west of Main Street (10%). In contrast, only 2% of the comments provided by residents from the Main Street Adjacent segment included a reference to potential positive effects involving improved traffic flows.

Anticipated negative consequences of a 300 East interchange. Responses to the open-ended question asking survey participants to identify what they anticipate to be the most negative effects of an I-15 interchange at 300 East generated a list of concerns much like those raised for the parallel question focused on effects of a Main Street interchange. The theme that emerged most frequently from these written comments involved concerns about traffic conditions, including increased traffic volumes generally as well as the presence of more traffic in residential areas and close to homes. Comments related to this "traffic issues" theme were provided by 122 individuals from throughout the study area. Looking separately at the five study area segments, comments that included a reference to this theme were expressed most often by respondents from the area west of Main Street (present in 51% of written comments) and by residents of the Main Street Adjacent and the Between Main Street and 300 East segments (in 42% of comments for both areas). Fewer of the responses provided by survey participants living in the 300 East Adjacent segment (28%) or the area east of 300 East (15%) referenced a concern about such traffic issues as a negative effect.

Another negative effects issue raised with some frequency involves concerns about changes to the valued character and qualities of area neighborhoods and the "Old Town" area of Washington City more generally. Responses such as "will ruin the heart of Washington City," "destroy our quality of life," "would ruin the neighborhood," and "too close to school and community center" are indicative of the types of concerns linked to this generalized notion of a threat to valued local conditions and amenities. For the study area as a whole 65 comments were identified as referencing this general theme regarding anticipated negative effects of a 300 East interchange. Such concerns were most frequently incorporated into comments provided by residents of the Main Street Adjacent area (included in 36% of comments), less often by those living in the 300 East Adjacent and Between Main Street and 300 East segments (19% in both areas) and the area located immediately to the west of Main Street (14%), and least frequently by those living in the area immediately to the east of 300 East (referenced in just 9% of written comments).

Negative effects on residential properties and property owners, revolving primarily around concerns about loss of property, removal of homes, and reduced property values, were also mentioned by more than a handful of survey participants (59 for the study area overall). Interestingly, such issues were identified in 33% of the written comments provided by respondents located in the Main Street Adjacent segment of the study area, with relatively less frequent mention of these types of negative effects evident in the comments provided by respondents from the area west of Main Street (included in 22% of responses), the 300 East Adjacent segment (17%), the area between Main Street and 300 East (13%), and the area immediately to the east of 300 East (8%).

Mentioned with considerably less frequency as a concern regarding negative project effects were issues involving increased noise, primarily in relation to increased traffic levels that would accompany the development of an interchange at 300 East. Across the study area overall 19

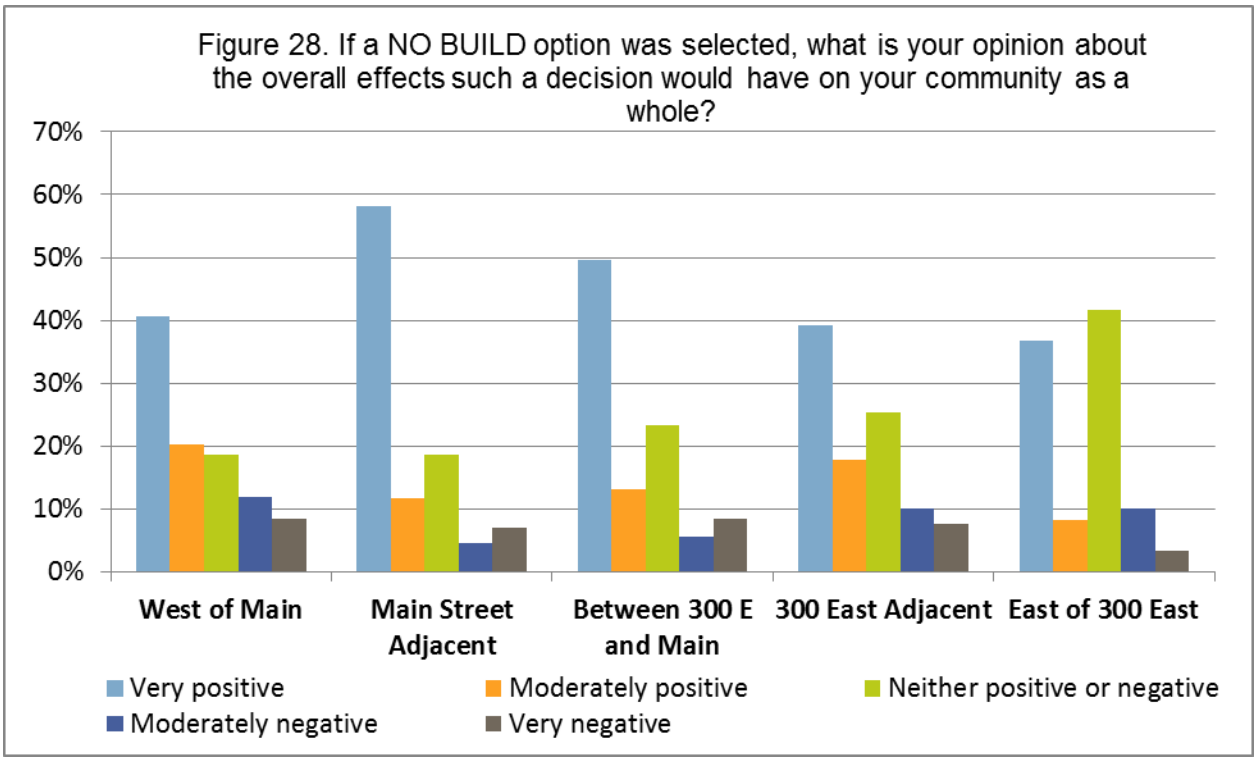
individuals identified noise effects as being among the most important anticipated negative effects of having a new I-15 interchange at that location. Expressions of such concern were incorporated in a higher percentage of the comments provided by residents of the Main Street Adjacent (11%) and Between Main Street and 300 East (8%) segments of the study area, slightly less often by those living in the area to the west of Main Street (6%), and least often by respondents living in either the 300 East Adjacent or East of 300 East segments (referenced in just 2% of comments provided by respondents from both areas).

The only other "negative effects" issue raised in comments provided by more than 10 survey participants involved expressions of concern that having an I-15 interchange at 300 East would lead to increased local crime problems. For the study area overall 11 individuals provided written comments that included some reference to this issue of concern. For the individual study area segments comments indicative of this crime concerns theme were included in 6% of the written responses volunteered by residents living in the area immediately to the west of Main Street, 3% of responses from both the Main Street Adjacent and Between Main Street and 300 East segments, and 2% of responses from both the 300 East Adjacent and East of 300 East segments.

Reactions to a No Action/No Build Decision

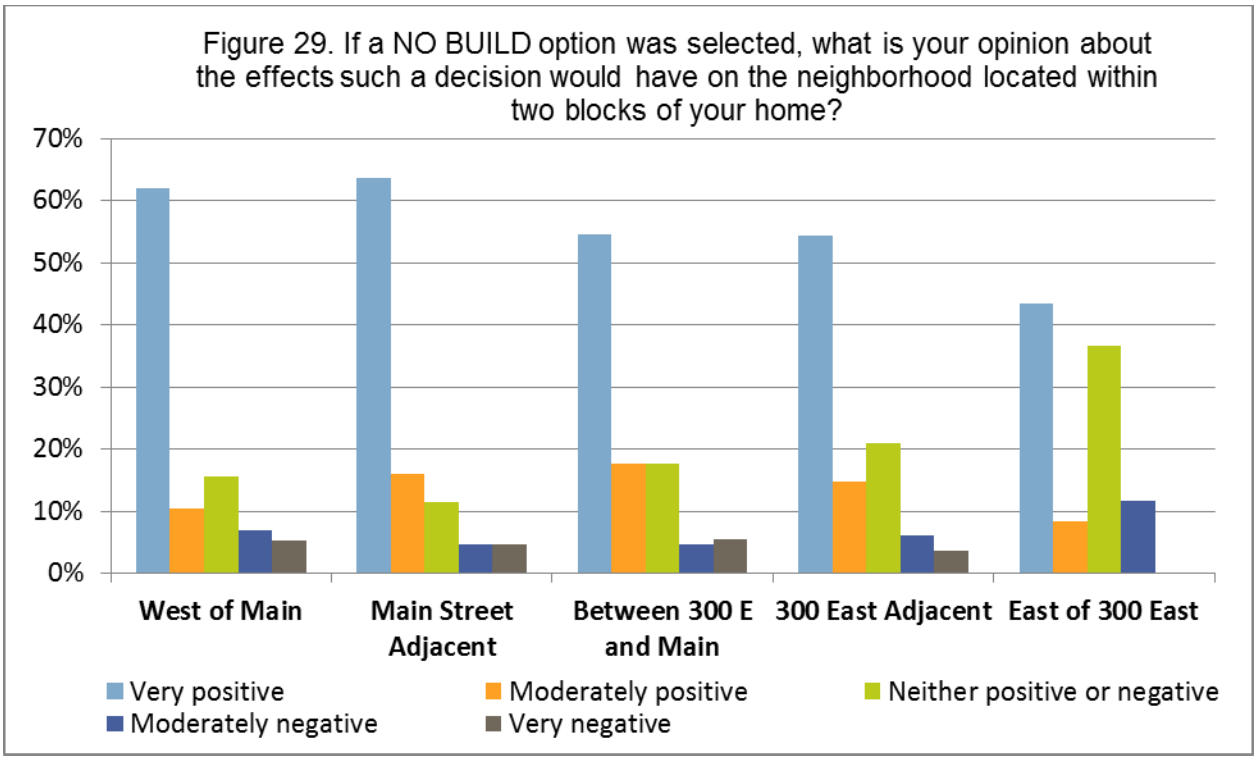
Anticipation of effects for the community as a whole. In a final series of questions focused on expectations about project consequences, survey respondents were asked to consider the possible community-wide, neighborhood, and personal consequences of implementing a No Action ("No Build") alternative that would maintain existing transportation infrastructure and conditions in the study area. The first question in this series asked respondents to report their expectations about the effects such a decision would have for the local community as a whole. For the study area overall 45% of survey participants indicated that they believed such a decision would have "very positive" effects for their community, and an additional 14% said that effects would be "moderately positive." Only 7% of respondents indicated that effects would be "very negative," and 8% said they would be "moderately negative."

Response patterns summarized in Figure 28 reveal that the area-wide tendency to anticipate that a decision to not build an I-15 interchange in the vicinity of MP 11 would have positive effects for the community as a whole is also evident in each of the study area segments. The combined percentage of "very positive" and "moderately positive" responses was highest among residents located in the Main Street Adjacent segment (70%), slightly lower among those in the Between Main Street and 300 East segment (63%) and the area immediately to the west of Main Street (61%), and lower still among those living in the 300 East Adjacent segment (57%) and the area immediately to the east of 300 East (45%). Responses indicative of expectations that a "no build" decision would have negative effects community-wide were reported by no more than 20% of respondents from any of the study area segments.



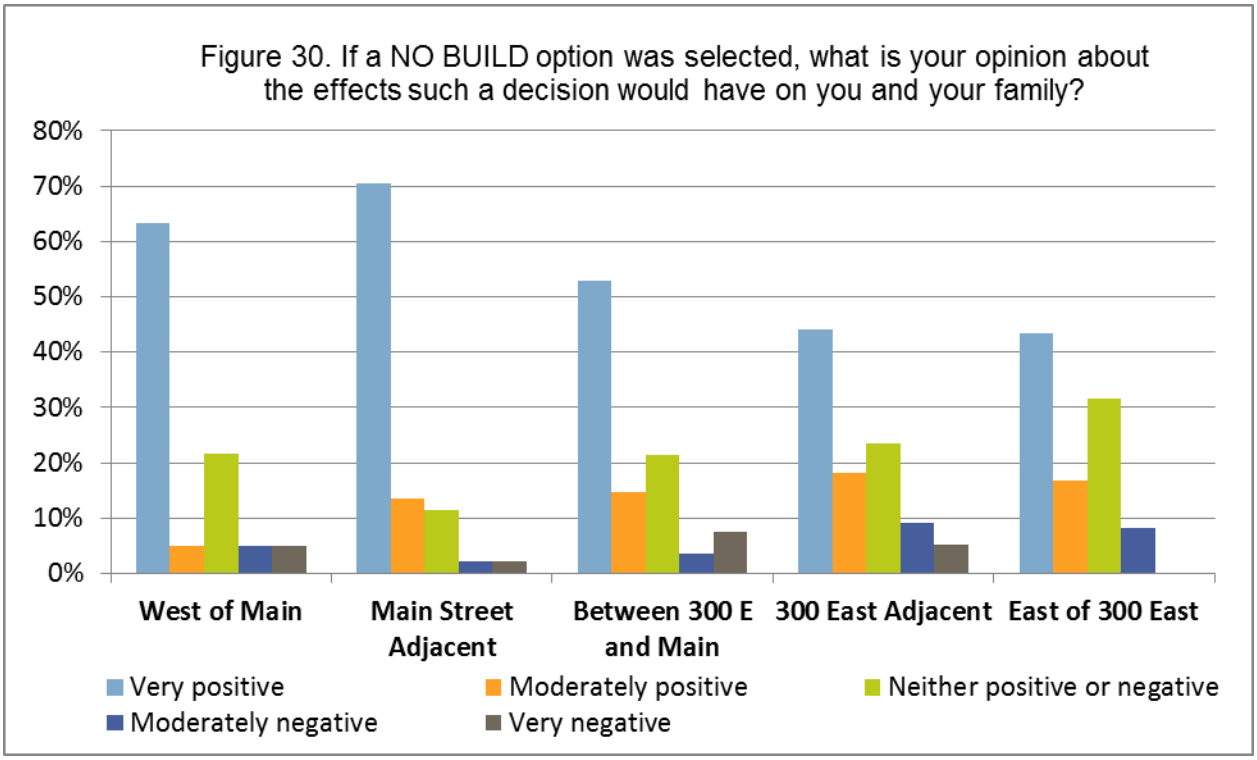
Anticipation of effects for the local neighborhood. The next question in this series asked survey participants to consider possible effects of a No Action/No Build decision on the neighborhood area located within two blocks of their homes. Once again, response patterns revealed a strong tendency for area residents to anticipate that such a decision would have positive as opposed to negative effects. For the study area as a whole 55% of respondents selected the "very positive" effects answer to the question, and an additional 14% said that effects would be "moderately positive;" only a combined 11% indicated that they believe a No Action/No Build decision would have either moderately or very negative effects on their local neighborhoods.

As is indicated in Figure 29, this tendency to anticipate positive as opposed to negative effects is also evident across each of the individual study area segments. For each segment more than half of respondents indicated that they believe a No Action/No Build decision would have positive effects for their local neighborhoods. The combined total of very positive and moderately positive responses was highest among those living adjacent to Main Street (80% of responses), slightly lower among those living in the area between Main Street and 300 East (73%), immediately to the west of Main Street (72%), and adjacent to 300 East (69%), and lowest among those located in the area immediately to the east of 300 East (51%).



Anticipation of effects for respondents and their families. Responses to the third question in this series, which asked survey participants to consider possible effects of a No Action/No Build decision on themselves and their families, were very similar to those outlined above regarding anticipated community-wide and neighborhood-level effects. For the study area as a whole 53% of respondents selected the "very positive" answer to the question, while 14% anticipated that effects for themselves and their families would be "moderately positive;" only a combined 11% indicated that they believe they and their families would experience any level of positive effects from such a decision.

Response patterns across each of the five study area segments also reflected a strong tendency for residents of those areas to anticipate that a No Action/No Build decision would have positive effects for themselves and their family members (Figure 30). Expectations of positive effects were reported most frequently by those living in the Main Street Adjacent segment (a combined 84% for the very positive and moderately positive response options), and slightly less often by those living in the area immediately to the west of Main Street or in the area between Main Street and 300 East (68% for each of these areas), those located in the 300 East Adjacent segment (62%), and those living in the area immediately to the east of 300 East (60%).



Anticipated positive effects of a No Action/No Build decision. Survey participants were also provided with an opportunity to respond to an open-ended question that asked them to describe in their own words what they believe would be the most positive as well as the most negative impacts of a "No Build" decision. With regard to anticipated positive impacts, across the study area overall the most frequently-volunteered comments centered on the fact that such a decision would allow valued neighborhood characteristics and amenities to remain intact. A total of 112 individuals provided written responses that were indicative of this general theme. Comments linked to this category of responses included things like "being able to walk around to parks, church, museum, post office, dentist and doctor, to friends and neighbors," "maintains a quieter and more peaceful neighborhood," "community would stay small and residential," and "preservation of community ties and relationships." Looking across the individual study area segments, comments revolving around this theme were expressed most frequently by residents of the area immediately to the west of Main Street (included in 69% of written responses) and those living in the Main Street Adjacent segment (included in 54% of responses), slightly less often among those located in the area between Main Street and 300 East (42%) or immediately adjacent to 300 East (41%), and least often by those living in the area immediately to the east of 300 East (34%).

Another theme included with considerable frequency in comments about positive effects of a No Action/No Build decision involved expectations that study area traffic levels would remain at relatively low and tolerable levels. For the study area as a whole 71 survey participants referenced such expectations in their volunteered comments. This theme was expressed with similar frequency across the five study area segments, ranging from inclusion in 27% of comments provided by residents of the 300 East Adjacent segment to 33% of comments from those located in the area immediately to the west of Main Street.

Positive effects involving residential properties and property owners were referenced in comments provided by 69 individuals from throughout the study area. Expectations that a No Action/No Build decision would have such positive effects due to avoidance of relocations, property losses, or declines in property values were addressed in a higher percentage of written responses volunteered by survey participants living in the Main Street Adjacent segment of the study area (41%), with fewer responses addressing this theme provided by those located in the West of Main Street segment (31%), the 300 East Adjacent segment (29%), the area between Main Street and 300 East (26%), and the area immediately to the east of 300 East (20%).

Another theme regarding positive effects that was mentioned with some frequency centered on expectations that implementation of a No Action/No Build decision would help to maintain safer neighborhood conditions – particularly for children and pedestrians. This theme was included in written comments provided by 59 individuals from throughout the study area. Comments linked to this "safety conditions" issue were expressed at highest frequency by respondents located in the area immediately to the west of Main Street (included in 36% of written responses) and those located immediately to the east of 300 East (31%), less often by those located between Main Street and 300 East (26%) or in the 300 East Adjacent segment (20%), and least often by respondents living in the Main Street Adjacent segment (11%).

The only other theme regarding positive effects of a No Action/No Build decision that was expressed by more than 10 individuals centered on the expectation that such a decision would help to maintain low noise levels in study area neighborhoods. Comments indicative of this "low noise" theme were included in the written responses provided by 27 individuals from throughout the study area, and were most commonly voiced by those living in the area east of 300 East (referenced in 20% of responses) and the area west of Main Street (17%), less often by those located in the Main Street Adjacent (11%) and Between Main Street and 300 East segments (10%), and least often by respondents living in the 300 East Adjacent segment (4%).

Anticipated negative effects of a No Action/No Build decision. Relatively few survey participants chose to respond when asked to describe in their own words what they thought would be the most important negative effects resulting from a No Action/No Build decision. Among those who did provide a written response, a substantial number of individuals (55) from throughout the study area indicated that they believe no negative effects would result from such a decision.

Among those who did provide comments pertaining to anticipated negative effects, only one theme was addressed by more than ten individuals. The most frequently-addressed issue regarding negative effects of a No Action/No Build decision centered on the idea that traffic congestion problems, particularly those experienced in the vicinity of the I-15 interchange at Exit 10 (Green Springs Drive), would continue to occur and/or become worse. This theme was expressed in comments provided by a total of 88 respondents from throughout the study area. It was also addressed with substantial frequency by residents from each of the five study area segments -- in 61% of comments provided by those located in the area west of Main Street, 59% from those in the Main Street Adjacent segment, 51% in the 300 East Adjacent segment, 48% in the East of 300 East segment, and 35% in the Between Main Street and 300 East segment.

SOCIAL EFFECTS ANALYSIS

Anticipatory Effects Occurring Prior to Project Implementation Decisions

To a degree certain social impacts associated with the proposed project have already emerged among residents of neighborhoods located in proximity to the project area. Many residents living in adjacent and nearby neighborhoods are aware of and to varying degrees concerned about the types of project activities that have been proposed. At the time when survey data collection activities were underway during October and November of 2017 a substantial number of study area homes, particularly those located along or near to the Main Street and 300 East corridors, had signs posted in front yards expressing opposition to the development of a new I-15 interchange. The controversial nature of the project was also evidenced during that same time period in positions taken by some candidates running for local municipal offices whose campaigns highlighted their opposition to an interchange involving areas around Main Street and 300 East. And, as was described previously in the Existing Social Conditions section of this report, residents of the study area overall and especially those living adjacent to or in close proximity to the Main Street and 300 East corridors generally expect that project implementation at either location would have negative impacts for the community, their local neighborhoods, and themselves and other family members. For considerable numbers of area residents such expectations have undoubtedly contributed to heightened levels of dissatisfaction with decision-makers and decision-making processes and worries about possible project effects.

Detailed information has yet to be released to the public regarding the need to remove some homes adjoining the Main Street and 300 East corridors if an alternative involving either of those locations is implemented. With those issues remaining unresolved residents living in corridor-adjacent areas are inevitably confronted by uncertainties and stresses regarding the possibility that their home could be identified for relocation, what property purchase and relocation assistance options might exist if that did occur, where they might end up living if the project should require their relocation, whether a satisfactory new home could be secured at an affordable cost, and how relocation to another home and a new neighborhood might alter their lives, their social ties and friendship patterns, and their overall levels of well-being. Residents of areas adjoining and surrounding potential project corridors who do not anticipate that their homes might require removal are confronted by other issues, including worries about how they and their neighborhoods might be impacted by the presence of a much busier roadway providing access to and from I-15, possible encroachment of a widened roadway onto their property or into closer proximity to their homes, increased exposure to traffic noise and vehicular air pollution, possible property value effects, and the potential departure of some neighbors. Even though a decision regarding project implementation is months away, anticipation of these and other potential negative effects has without doubt contributed to heightened levels of concern, frustration and worry on the part of substantial numbers of local-area residents. While such effects are “anticipatory” and would be of limited duration in the event that project implementation does not move forward or involves infrastructure construction at another location, they nevertheless represent meaningful negative impacts on the well-being of affected residents.

Alternative 1: NB Green Springs Drive Widening

Implementation of transportation improvement actions included as components of Alternative 1 would not have meaningful adverse impacts on community social conditions in nearby residential neighborhoods, or in Washington City overall. In the short term construction activities associated with this alternative would inevitably be accompanied by some inconvenience for both local-area residents and others who travel into and through the project area due to construction-related traffic delays and possible traffic detours. However, such effects would be of relatively short duration and would not disproportionately impact specific neighborhoods or population segments.

The construction activities and transportation infrastructure improvements associated with this alternative would not intrude into or encroach upon existing residential areas, and would not contribute to a major increase in traffic flows into or through nearby residential neighborhoods. No homes would require removal, nor would existing homes in the surrounding area experience property loss or adverse proximity effects due to roadway widening or other construction activities. As such, the social characteristics of neighborhoods located in surrounding portions of Washington City would not be altered to a meaningful degree as a result of construction activities and environmental changes associated with this alternative. Since intrusions into residential neighborhoods would not occur, there would not be disproportionate adverse social impacts involving Environmental Justice populations comprised of low-income or minority residents, nor would other potentially vulnerable populations such as elderly persons be exposed disproportionately to any possible adverse social effects.

Because the actions associated with Alternative 1 would occur in an area that does not attract extensive pedestrian use or travel by children as they go to and from school, implementation of this alternative would in all likelihood not generate the levels of concern about safety issues that have been expressed by study area residents located nearer to the Main Street and 300 East corridor locations. In addition, since transportation improvements associated with this alternative would not extend into or alter conditions in residential neighborhoods, there would not be adverse effects on neighborhood-based interactions, social ties, and social cohesion levels. As has been noted in earlier portions of this report, study area residents have expressed high levels of concern about what they anticipate to be negative project effects of either a Main Street or 300 East interchange location on overall community conditions, neighborhood conditions, and conditions experienced by themselves and member of their families. Implementation of Alternative 1 would alleviate those concerns.

A decision to adopt this alternative would be consistent with preferences expressed by substantial numbers of individuals living in study area neighborhoods surrounding the Main Street and 300 East corridors for implementation of transportation actions that could improve access to/from I-15 and address traffic congestion problems, while at the same time avoiding the major alterations to local neighborhood conditions that would accompany the creation of an I-15 interchange and access corridor involving roads that extend through primarily residential areas. Although over the long term traffic congestion problems involving I-15 and the area surrounding the MP 10 interchange at Green Springs Drive might not be adequately addressed by this alternative, in the near term improvements associated with Alternative 1 would in all likelihood

be considered more satisfactory by residents of the social assessment study area than would be the case for other construction alternatives under consideration. As such, a decision to implement Alternative 1 could be expected to generate a positive overall reaction among most residents of the study area neighborhoods that encompass and surround those corridors, and increased levels of satisfaction with agency decision-making processes on the part of most residents of those neighborhoods.

Alternative 4: Main Street Interchange

Construction-phase disturbance and inconvenience. In the short term residents living throughout the study area would in many cases experience inconvenience and probable frustration resulting from traffic diversions and delays associated with project construction activities, including both the construction of a new I-15 interchange and roadway reconstruction extending along Main Street between I-15 and Telegraph Street. Because responses to the community social survey indicate that residents from throughout the study area drive with considerable frequency along that portion of Main Street, these near-term effects would be experienced both by those living in closest proximity to the Main Street corridor and by many others who live at greater distance within the study area and beyond. In addition, those whose homes are immediately adjacent or in close proximity to locations where construction activities would take place would experience disturbances and associated stress-related effects resulting from exposure to construction-related noise. Some may also experience a localized deterioration of air quality resulting from the operation of construction equipment and airborne dust generated by construction activities, as well as disturbance resulting from nighttime lighting of construction sites.

Household relocation effects. Construction of a new I-15 interchange connecting to Main Street is expected to require removal of six homes, all located in the northernmost portion of the Main Street Adjacent segment of the study area either directly adjacent to the east side of Main Street or in an area immediately to the east along the north side of 400 North. That number represents approximately 10% of the total number of occupied homes identified as being located within the Main Street Adjacent segment of the study area at the point in time when the community social survey was conducted.

Required relocation from their current residences would have potential to create some degree of social and as well as economic difficulty for those directly affected by the removal of their homes. Property owners would receive fair market compensation for the values of their homes as well as possible additional funding if necessary to cover a higher cost for purchase of what is deemed to be a functionally equivalent residence, along with reimbursement of moving expenses. For any of those affected by relocation who rent rather than own their homes, dealing with the costs associated with finding and moving to a new residence could be particularly challenging.

Given the generally high levels of social cohesion and community attachment reported for the Main Street Adjacent segment of the study area, removal of 10% of households from that area would likely disrupt some of the neighborhood-based social ties and interaction patterns that are well-established among many residents of this area. Such adverse effects on localized social relations and community cohesion could affect not only those who live in homes designated for removal, but also neighbors living nearby with whom they may share social ties.

Data derived from the community social survey indicate that as of October/November 2017 two of the households that would be directly affected by forced relocation associated with this alternative were classified as minority-occupied; one of those households was also identified as having one or more occupants age 65 or older. One other non-minority household designated for relocation reported a household income level falling below the poverty threshold. Longer-term adaptive difficulties associated with relocation would be more likely to occur among elderly and low-income residents, because those populations tend generally to have lower access to the range of resources and opportunities needed to establish interpersonal and organizational ties that rely less heavily on residential location and proximity. In addition, persons who are members of racial or ethnic minority populations may experience greater adaptive challenges following relocation, due to barriers they may encounter in attempting to build social ties in other areas where in at least some instances their minority status could contribute to exclusion rather than integration into localized social networks. Although the total number of displaced households would be relatively small under this alternative, it is nevertheless important to note that half of those affected would be classified as representative of Environmental Justice populations, and as such may experience increased vulnerabilities linked to relocation requirements.

Alteration of valued community attributes and amenities. Responses to the community social survey reveal that residents living throughout the study area place high value on existing neighborhood conditions, which they often characterize as peaceful, quiet, and safe with respect to both local-area traffic levels and worries about crime. For those living adjacent to or in close proximity to Main Street, implementation of this alternative would lead to a deterioration of at least some of those valued neighborhood and community attributes.

Even though widening and reconstruction of the Main Street corridor would take place within the existing right of way, many of those who live directly adjacent to the corridor would experience increased proximity to the roadway, along with exposure to much higher traffic levels and associated traffic noise and vibration than is the case under current conditions. Increased exposure to these environmental and sensory disturbances has potential to increase stress levels, and may negatively affect the health status of persons living in very close proximity to the roadway (Passchier-Vermeer and Passchier, 2000). In addition, substantially increased traffic flows on Main Street and perhaps to a lesser degree on nearby surface streets would contribute to increased concern about pedestrian uses and safety, and in all likelihood to reductions in such activities in areas where a substantial increase in traffic volume occurs.

Over the longer term a transformation of land use patterns and the composition of resident populations located along and near to the Main Street corridor could be expected as the area becomes more attractive for commercial use, and as some residents choose to move away from what they would likely consider a less desirable neighborhood setting. To the extent that such

transitions do occur, current conditions involving high levels of home ownership and long-term residence patterns would likely give way to increased presence of rental properties and a more transitory character for the populations of some neighborhoods. Such conditions would lead in turn to reduced levels of interpersonal acquaintance, interaction and social integration within affected neighborhood areas.

Social integration and community cohesion effects. As was noted in earlier portions of this report levels of familiarity, interaction, and social engagement among neighbors as well as other indicators of social integration, cohesion and community attachment are generally high throughout the neighborhoods that were the focus of the community social survey, and especially high among those living within the Main Street Adjacent segment of the study area. Residents of the Main Street Adjacent area, as well as those living in nearby neighborhoods located immediately to the west and east of Main Street, also reported frequent engagement in activities such as walking, jogging or bicycling that involve use of the Main Street corridor.

Implementation of Alternative 4 would have considerable potential to result in some deterioration of these neighborhood-level social integration and community cohesion conditions, particularly for residents who live along or very near to the Main Street corridor. In addition to removal of 10% of homes within that segment of the study area, the transformation of Main Street into a major transportation artery providing access to and from a new I-15 interchange could be expected to result in reduced levels of familiarity and interaction among nearby residents. The presence of a widened and much more heavily traveled roadway would inevitably make it more difficult for area residents to walk across Main Street to interact with neighbors, or to engage in outdoor activities such as walking, jogging or bicycling that may help to create opportunities to encounter and interact with other nearby residents. Research evidence indicates that in neighborhoods characterized by proximity to high-volume roadways and exposure to high traffic noise levels local residents are less likely to spend time outside of their homes, and less likely to know or interact with neighbors (Appleyard and Lintell, 1972; Devlin, 2018). That same body of research also indicates that neighborhoods characterized by high traffic intensity and noise can be expected to experience a departure of some residents, particularly families with children. Given these circumstances, it is likely that implementation of Alternative 4 would lead to a substantial alteration of social integration and cohesion conditions within the neighborhoods that directly adjoin or are in close proximity to the Main Street corridor, due in part to disturbances associated with increased traffic volumes and higher traffic noise levels as well as both forced and voluntary relocations involving some local residents.

Environmental Justice and other potentially vulnerable populations. As was discussed earlier in this report, concentrations of below-poverty households in the social assessment study area overall, and within the Main Street Adjacent segment specifically, are similar to or only slightly higher than those observed for Washington City as a whole. Also, in the more localized portion of the Main Street Adjacent segment where removal of residences would result from implementation of Alternative 4, just one of the six directly affected households was identified from survey data as being below the poverty level. Given these circumstances, disproportionate adverse impacts involving residents of households with incomes falling below the poverty level would not be expected to occur.

At the same time survey data do indicate that racial and ethnic minority populations are present at higher levels of concentration in some portions of the study area, including the Main Street Adjacent segment, than is the case for Washington City overall. Estimates derived from responses to the community social survey indicate that 26% of households within the Main Street Adjacent segment had one or more occupants for whom a racial and/or ethnic minority identity was reported. While that percentage is nearly identical to what was indicated for the social assessment study area overall, it is considerably higher than the percentage of minority residents reported in Census data for Washington City. Given these circumstances, there is some potential for implementation of Alternative 4 to be accompanied by disproportionate adverse impacts involving localized minority populations.

Also, survey results indicate that there is a substantially higher concentration of households occupied by one or more persons age 65 or older in the social assessment study area and in each of the study area segments than appears to be the case for Washington City overall. This is particularly true for those located within the Main Street Adjacent segment, where more than half of households participating in the community social survey were reported to have one or more elderly occupants. Because older individuals often experience greater adjustment difficulties when confronted by changes involving disruption of social ties and social support linkages, the potential for transportation improvement actions under this alternative to generate impacts involving a deterioration of localized social integration and interaction patterns could be expected to fall more heavily on some older residents. Although older persons are not categorized as representing an Environmental Justice population, it is nevertheless important to recognize that elderly persons living within and near to the Main Street corridor could experience disproportionately high and negative social effects as a result of the proposed transportation improvement actions.

Alternative 5: 300 East Interchange

Construction-phase disturbance and inconvenience. As would occur with Alternative 4, implementation of Alternative 5 would cause many residents living throughout the study area to experience inconvenience and frustration during the construction period as a result of traffic diversions and delays associated with project construction activities, including both the construction of a new I-15 interchange and roadway reconstruction extending along 300 East between I-15 and Telegraph Street. Responses to the community social survey indicate that residents from throughout the study area drive with considerable frequency along that portion of 300 East, due in part to the presence of a public elementary school and a large community recreation center along the east side of the roadway. As a result, these construction-phase disturbances would be experienced both by those living in closest proximity to 300 East and by many others who live at greater distance within the study area and beyond. In addition, those whose homes are immediately adjacent or in close proximity to locations where construction activities would take place would experience disturbances and associated stress-related effects that may accompany exposure to construction-related noise. Some may also experience a localized deterioration of air quality resulting from the operation of construction equipment and exposure to airborne dust generated by construction activities, as well as disturbance resulting from nighttime lighting of construction sites.

Household relocation effects. Construction of a new I-15 interchange connecting to 300 East is expected to require removal of at least 16 homes (five in proximity to 100 North and immediately adjacent to 300 East[1] and eleven located on the north end of the 300 East corridor). That number represents approximately 14% of the total number of occupied homes identified as being located within the 300 East Adjacent segment of the study area at the point in time when the community social survey was conducted.

Required relocation from their current residences would have potential to create some degree of social and as well as economic difficulty for those directly affected by the removal of their homes. Property owners would receive fair market compensation for the values of their homes as well as possible additional funding if necessary to cover a higher cost for purchase of what is deemed to be a functionally equivalent residence, along with reimbursement of moving expenses. For any of those affected by relocation who rent rather than own their homes, dealing with the costs associated with finding and moving to a new residence could be particularly challenging.

Data derived from the community social survey indicate that as of October/November 2017 two of the households currently identified for relocation under this alternative were classified as minority-occupied, and six were identified as having one or more occupants age 65 or older. Two of the households designated for relocation reported an income level falling below the poverty threshold. Overall the disruptive effects of required relocation would involve a number of households within the 300 East study area segment that is larger in both an absolute and relative sense than would be the case with changes to the Main Street corridor that would accompany implementation of Alternative 1.

The numbers and percentages of households affected by relocation that are occupied by persons representative of Environmental Justice populations are relatively small. At the same time, households occupied by one or more elderly persons represent approximately 38% of the number of homes that would be subject to relocation; that percentage is higher than the percentage of elderly-occupied households in the 300 East Adjacent segment, but similar to what has been reported for the study area overall. On the whole, it would appear that the effects of required relocations would not involve substantially disproportionate adverse impacts on Environmental Justice or other vulnerable populations.

Alteration of valued community attributes and amenities. Responses to the community social survey reveal that residents living throughout the study area place high value on existing neighborhood conditions, which they often characterize as peaceful, quiet, and safe with respect to both local-area traffic levels and worries about crime. For those living adjacent to or in close proximity to 300 East especially, but also for residents living in other portions of the study area who in many cases make frequent use of the 300 East corridor and nearby public facilities and amenities, implementation of this alternative would lead to a deterioration of at least some of those valued neighborhood and community attributes.

[1] A final determination of required home removals was not available at the time when this report was finalized. However, it is possible that the number of residential relocations could increase slightly if a shift of the 300 East road alignment to the east is necessary in order to avoid encroachment into the Washington City cemetery.

Reconstruction of 300 East would require a widening of the roadway along with alignment shifts in some locations. As a result many of those who live directly adjacent to the corridor would experience increased proximity to the roadway, along with exposure to much higher traffic levels and associated traffic noise and vibration than is the case under current conditions. Increased exposure to these environmental and sensory disturbances has potential to increase stress levels, and may negatively affect the health status of persons who living in very close proximity to the roadway (Passchier-Vermeer and Passchier, 2000). In addition, substantially increased traffic flows on 300 East and perhaps to a lesser degree on nearby surface streets would contribute to increased concern about pedestrian uses and safety, and in all likelihood to reductions in such activities in areas where a substantial increase in traffic volume occurs. Such effects would be of considerable concern among residents living in immediate proximity to the 300 East corridor as well as many who live at greater distance throughout the study area. These concerns would be especially pronounced under conditions associated with this alternative given the large numbers of school children who walk or bicycle to and from the local elementary school and the substantial numbers of both children and adults who travel along or across the roadway to access the community recreation center. Indeed, survey response patterns reveal higher levels of concern among area residents about adverse effects associated with implementation of a 300 East interchange location than was the case when location of an interchange at Main Street was considered, due in large part to the presence of those two public facilities within the 300 East corridor and widespread concern about possible effects on the safety of children who access those areas.

Over the longer term a transformation of land use patterns and the composition of resident populations located along and near to the 300 East corridor could be expected as the area becomes more attractive for commercial use, and as some residents choose to move away from what they would likely consider a less desirable neighborhood setting. To the extent that such transitions do occur, current conditions involving high levels of home ownership and a limited presence of short-term and transitory residents would likely give way to increased presence of rental properties and a more transitory character for the populations of some neighborhoods. Such conditions would lead in turn to reduced levels of interpersonal acquaintance, interaction and social integration within affected neighborhood areas.

Social integration and community cohesion effects. As was noted in earlier portions of this report levels of familiarity, interaction, and social engagement among neighbors as well as other indicators of social integration, cohesion and community attachment are generally high throughout the neighborhoods that were the focus of the community social survey. While such conditions were slightly less evident among residents located in the 300 East Adjacent segment of the study area than was observed in areas adjoining or in close proximity to Main Street, there is still evidence of substantial community cohesion and attachment to place among residents who live along or in proximity to 300 East. Residents of the 300 East Adjacent area as well as those living in nearby neighborhoods also reported frequent engagement in activities such as walking, jogging or bicycling along or across the 300 East corridor.

Implementation of Alternative 5 would be expected to result in some deterioration of these neighborhood-level social integration and community cohesion conditions, particularly for residents who live along or very near to the 300 East corridor. The number of homes requiring

removal would be substantial in relation to the total number of residences located adjacent to the corridor, and would affect localized portions of both the northern and southern ends of the corridor. Those relocations could be expect to negatively affect social ties and interaction patterns among both those directly affected by displacement and some residents of surrounding areas with whom they may maintain friendships and other social relations. In addition, transformation of 300 East into a major transportation artery providing access to and from a new I-15 interchange could be expected to result in reduced levels of familiarity and interaction among a number of residents living within the corridor and nearby. The presence of a widened and much more heavily traveled roadway would inevitably make it more difficult for area residents to walk across 300 East to interact with neighbors, or to engage in outdoor activities such as walking, jogging or bicycling that may help to create opportunities to encounter and interact with other nearby residents. As was noted previously, research evidence indicates that in neighborhoods characterized by proximity to high-volume roadways and exposure to high traffic noise levels local residents are less likely to spend time outside of their homes, less likely to know or interact with neighbors, and more likely to reach a decision to relocate in search of a more desirable residential environment. Given these circumstances, it is likely that implementation of Alternative 5 would lead to a substantial alteration of social integration and cohesion conditions within the neighborhoods that directly adjoin or are in close proximity to the 300 East corridor, due to disturbances associated with increased traffic volumes and higher traffic noise levels as well as both forced and voluntary relocations involving some local residents.

Environmental Justice and other potentially vulnerable populations. As was discussed earlier in this report, concentrations of below-poverty households in the social assessment study area overall, and within the 300 East Adjacent segment specifically, are similar to or only slightly higher than those observed for Washington City as a whole. Also, in the more localized portions of the 300 East Adjacent segment where implementation of Alternative 5 would require removal of residences, just two of the sixteen directly affected households were identified from survey data as being below the poverty level. Given these circumstances, disproportionate adverse impacts involving residents of below-poverty households would not be anticipated.

Just two of the sixteen residences that are candidates for removal under this alternative were identified as being occupied by one or more racial/ethnic minority members. That number is small relative to the total number of removals, and lower as a percentage of removals in comparison to the percentage of minority-occupied households in the study area overall and in the 300 East Adjacent segment. At the same time survey data do indicate that racial and ethnic minority populations are present at higher levels of concentration in some portions of the study area, and especially in the 300 East Adjacent segment, than is the case for Washington City overall. Estimates derived from responses to the community social survey indicate that 37% of households within the 300 East Adjacent segment had one or more occupants for whom a racial and/or ethnic minority identity was reported. That percentage is higher than was indicated for the social assessment study area overall, and considerably higher than the percentage of minority residents reported in Census data for Washington City. Given these circumstances, there is potential for implementation of Alternative 5 to be accompanied by disproportionate adverse impacts involving localized minority populations.

Also, as was noted previously survey results indicate that there is a substantially higher concentration of households occupied by one or more persons age 65 or older in the social assessment study area and in each of the study area segments than appears to be the case for Washington City overall. However, this concentration of elderly residents is less evident in the 300 East Adjacent segment of the study area, where 27% of households participating in the community social survey were reported to have one or more elderly occupants. Because older individuals can experience greater adjustment difficulties when confronted by changes involving disruption of social ties and social support linkages, the potential for transportation improvement actions under this alternative to generate impacts involving a deterioration of localized social integration and interaction patterns could fall more heavily on some older residents. For that reason it is important to recognize that elderly persons living within and near to the 300 East corridor could experience disproportionately high and negative social effects as a result of the proposed transportation improvement actions. However, the extent to which such impacts might occur would be lower under this alternative than would be anticipated if the Main Street interchange location considered under Alternative 4 were to be implemented.

Alternative 6: Thru-Turns

Implementation of transportation improvement actions included as components of Alternative 6 would be essentially identical to those outlined for Alternative 1. There would not be any meaningful adverse impacts on community social conditions in nearby residential neighborhoods, or in Washington City overall. In the short term construction activities associated with this alternative would inevitably be accompanied by some inconvenience for both local-area residents and others who travel into and through the project area due to construction-related traffic delays and possible traffic detours. However, such effects would be of relatively short duration and would not disproportionately impact specific neighborhoods or population segments.

The construction activities and transportation infrastructure improvements associated with this alternative would not intrude into or encroach upon existing residential areas, and would not contribute to a major increase in traffic flows into or through nearby residential neighborhoods. No homes would require removal, nor would existing homes in the surrounding area experience property loss or adverse proximity effects due to roadway widening or other construction activities. As such, the social characteristics of neighborhoods located in surrounding portions of Washington City would not be altered to a meaningful degree as a result of construction activities and environmental changes associated with this alternative. Since intrusions into residential neighborhoods would not occur, there would not be disproportionate adverse social impacts involving Environmental Justice populations comprised of low-income or minority residents, nor would other potentially vulnerable populations such as elderly persons be exposed disproportionately to any possible adverse social effects.

Because the actions associated with Alternative 6 would occur in an area that does not attract extensive pedestrian use or travel by children as they go to and from school, implementation of this alternative would in all likelihood not generate the levels of concern about safety issues that have been expressed by study area residents located nearer to the Main Street and 300 East

corridor locations. In addition, since transportation improvements associated with this alternative would not extend into or alter conditions in residential neighborhoods, there would not be adverse effects on neighborhood-based interactions, social ties, and social cohesion levels. As has been noted in earlier portions of this report, study area residents have expressed high levels of concern about what they anticipate to be negative project effects of either a Main Street or 300 East interchange location on overall community conditions, neighborhood conditions, and conditions experienced by themselves and member of their families. As with Alternative 1, implementation of Alternative 6 would alleviate those concerns.

A decision to adopt this alternative would be consistent with preferences expressed by substantial numbers of individuals living in study area neighborhoods surrounding the Main Street and 300 East corridors for implementation of transportation actions that could improve access to/from I-15 and address traffic congestion problems, while at the same time avoiding the major alterations to local neighborhood conditions that would accompany the creation of an I-15 interchange and access corridor involving roads that extend through primarily residential areas. Although over the long term traffic congestion problems involving I-15 and the area surrounding the MP 10 interchange at Green Springs Drive might not be adequately addressed by this alternative, in the near term improvements associated with Alternative 6 would in all likelihood be considered more satisfactory by residents of the social assessment study area than would be the case for other construction alternatives under consideration. As such, a decision to implement Alternative 6 could be expected to generate a positive overall reaction among most residents of the study area neighborhoods that encompass and surround those corridors, and increased levels of satisfaction with agency decision-making processes on the part of most residents of those neighborhoods.

No Action Alternative

A decision to adopt the No Action alternative would leave existing social conditions intact in the localized neighborhoods that adjoin and are near to project areas for Alternative 4 (Main Street interchange location) and Alternative 5 (300 East interchange location). Removal of a relatively limited number of homes that would be required under either of those alternatives would not take place. As a result residents of homes that might otherwise be candidates for removal would not experience the individual and household-level social and economic stresses that frequently accompany such mandatory relocations, and those who wish to remain in their current homes could continue to do so into the foreseeable future. In addition, residents of other homes located immediately adjacent to those two project corridors would not be faced with possible disruption to localized social interaction patterns and friendship ties that could result from a relocation of some neighbors. They would also not be exposed to disturbances and potential stresses that could be expected to accompany increased highway proximity, exposure to construction-period noise and dust levels, post-construction increases in traffic volume and traffic noise levels, potential localized air quality effects, and possible associated effects such as reduced property values.

Throughout all portions of the study area residents who participated in the community social survey reported high levels of concern about a deterioration of valued neighborhood conditions

and qualities that they believe would result from location of a new I-15 interchange at either Main Street or 300 East. Because the transformation of an existing roadway within the study area into a more heavily-traveled corridor providing access to a new I-15 interchange would not occur, residents' concerns about the safety of pedestrians and especially school children who walk or bicycle along and across those corridors would be alleviated. In addition, as was noted previously neighborhood-based interactions, social ties and attachments appear to be strong and well-established among many residents living throughout the study area, and those social cohesion conditions would not altered by a decision to implement the No Action alternative. Because these manifestations of social integration and community cohesion represent important facets of social well-being, a decision to adopt the No Action alternative would be considerably more positive in regard to those conditions than would be the case if transportation improvements involving implementation of either Alternative 4 or Alternative 5 were to move forward.

At the same time, a decision to adopt the No Action alternative would fail to address concerns expressed by some local-area residents about traffic congestion problems that currently exist in the area of Exit 10 and adjoining segments of Green Springs Drive. However, results from the community social survey reveal that relatively few residents living in the study area consider current levels of traffic congestion in that area to represent a very serious problem. In light of survey participants' views about those issues, in the near term at least it is unlikely that adoption of the No Action alternative would generate widespread dissatisfaction among study area residents over a failure to take immediate action to address congestion problems and improve traffic flows. However, over the longer term area residents' levels of concern about traffic congestion problems and the need to address them are likely to become more widespread, since substantial levels of growth and development and associated increases in traffic volumes can be expected to continue in this portion of Washington County.

In light of study area residents' high levels of concern about what they anticipate to be negative project effects of either a Main Street or 300 East interchange location on community conditions, neighborhood conditions, and conditions experienced at the individual and family level, selection of the No Action alternative could be expected to generate a positive overall reaction among most residents of the study area neighborhoods that encompass and surround those corridors, and increased levels of satisfaction with agency decision-making processes on the part of many study area residents.

Comparative Summary of Social Effects Associated with the Four Construction Alternatives

Construction-phase disturbance and inconvenience:

- Lowest for Alternative 1 and Alternative 6 due to absence of intrusion into residential areas
- Intermediate for Alternative 4 due to smaller number of affected on-corridor households and absence of public schools/facilities along that corridor
- Highest for Alternative 5 due to larger number of on-corridor households and extensive public use of the 300 East corridor due to the presence of an elementary school and community recreation center

Household relocation effects:

- None for Alternative 1 and Alternative 6
- Intermediate for Alternative 4 due to smaller number and lower proportion of households affected by relocation within the Main Street corridor
- Highest for Alternative 5 due to larger number and higher proportion of households affected by relocation within the 300 East corridor

Alteration of valued community attributes and amenities:

- None for Alternative 1 and Alternative 6 due to absence of intrusion into residential areas
- High for Alternative 4 due to increased disturbance associated with traffic volume, noise, etc.
- Highest for Alternative 5 due to increased disturbance associated with traffic volume, noise, etc., as well as increased public safety concerns involving school children accessing elementary school and children along with adults accessing the community recreation center

Social integration and community cohesion effects:

- None for Alternative 1 and Alternative 6 due to absence of intrusion into residential areas
- Intermediate for Alternative 5 because even though levels of social integration, socializing with neighbors and community cohesion in the area surrounding 300 East are substantial, they are not as high as in areas proximate to Main Street
- Highest for Alternative 4, because levels of social integration, socializing with neighbors and community cohesion are especially high within and near to the area of the Main Street corridor

Environmental Justice and other potentially vulnerable populations:

- None for Alternative 1 and Alternative 6
- Low for Alternative 4 due to lower percentage of racial/ethnic minority households along the Main Street corridor
- Higher for Alternative 5 due to larger percentage of racial/ethnic minority households along the 300 East corridor

<u>Impact Mitigation Suggestions and Strategies</u>

The survey questionnaire administered to residents of study area neighborhoods adjoining or in close proximity to the Main Street and 300 East corridors included a question that asked respondents to state in their own words what actions or design features might make the project something they could more easily live with, if a new interchange were to be located in the vicinity of Milepost 11. Many survey participants chose not to provide a response to this question, and among those who did volunteer an answer a substantial majority of comments involved some variation of a “none/do not build” response. However, several more concrete suggestions were offered by at least modest numbers of respondents.

The general theme expressed most frequently (though by only 24 individuals for the study area overall) in response to this question involved suggestions involving infrastructure improvements such as a sky bridge, pedestrian tunnel, signal-controlled pedestrian crossings, and sound walls/barriers to enhance pedestrian safety or reduce noise impacts. Another theme mentioned by more than ten respondents (17 for the study area overall) involved suggestions that attention be focused first on redesign of existing I-15 interchanges at Exit 10 and Exit 13 in order to address congestion problems while also eliminating or delaying the need to build a new interchange at Milepost 11. The only other suggestions highlighted by more than 10 respondents included redesign of the existing frontage road adjacent to I-15 to connect with and provide improved access to Exit 13, and configuration of the project in a manner that would preclude the need to remove any homes from affected neighborhoods. Finally, comments provided by 7 individuals focused on a need for implementation and enforcement of low speed limits on affected study area roadways.

Based on observations presented above regarding possible project impacts as well as these comments and recommendations provided by local area residents, several potentially useful impact mitigation strategies can be identified:

- Implementation of a comprehensive public communication program to insure that area residents are kept well-informed about project decisions, project design features, and the timing of various project implementation activities.

- Pro-active communications and contact with residents whose homes are identified as candidates for relocation to insure that those affected are provided with ample advance notification as well as a clear understanding of the property purchase and compensation process, and options that may be available to them.

- Given the relatively high concentrations of minority populations (predominantly individuals of Hispanic origin) in portions of the study area, preparation and presentation of all information and public communication materials and processes in Spanish as well as in English.

- Consideration of sound barrier installations in areas where highway noise effects are likely to be substantial and where utilization of such infrastructure is feasible.

- If either Alternative 4 or Alternative 5 is selected for implementation, consideration of vegetative landscape plantings alongside the affected road corridor to provide visual screening, enhance the privacy of property owners, and provide for some reduction in traffic noise effects.

- If either Alternative 4 or Alternative 5 is selected for implementation, consideration of pedestrian crossing infrastructure at one or more locations along the affected road corridor to enhance the safety of pedestrians and school children who make regular use of those areas.

- If either Alternative 4 or 5 is selected for implementation, coordination with responsible public authorities to encourage implementation and enforcement of lower speed limits along affected road corridors to enhance public safety and partially reduce traffic noise levels.

- Implementation of construction work schedules that would minimize or avoid altogether nighttime construction activities for project components that would be located in close proximity to residential neighborhoods.

References

Appleyard, Donald and Mark Lintell. 1972. "The environmental quality of city streets: The residents' viewpoint." *Journal of the American Institute of Planners* 38: 84-101.

Devlin, Ann S. 2018. *Environmental Psychology and Human Well-Being: Effects of Built and Natural Settings*. London: Academic Press.

Kasarda, John D. and Morris Janowitz. 1974. "Community attachment in mass society." *American Sociological Review* 39: 328-339.

Jennings, Brian and Richard S. Krannich. 2013. "A multidimensional exploration of the foundations of community attachment among seasonal and year-round residents." *Rural Sociology* 78: 498-527.

Passchier-Vermier, W. and W.F. Passchier. 2000. "Noise exposure and public health." *Environmental Health Perspectives* 108 (Supplement 1): 123-131.

RIGHT-OF-WAY ACQUISITION TABLE

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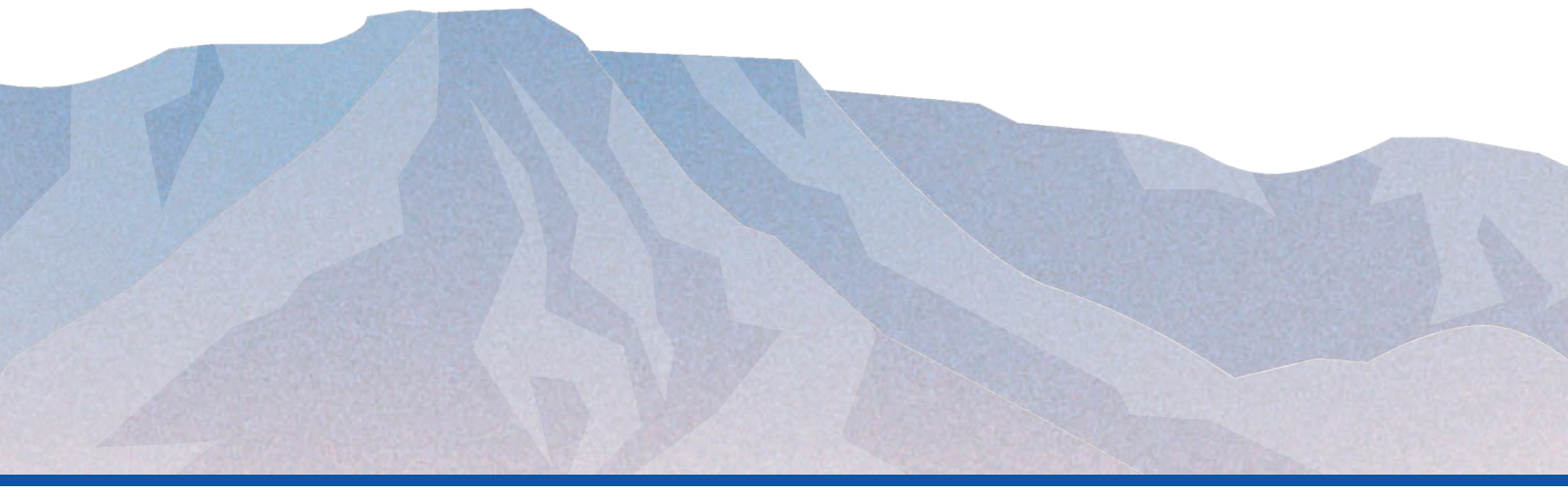

Number	Alternative	Acquisition Type	Address	Parcel Number	Area (Acres)
1	4	Partial	N/A - Buena Vista Boulevard	W-168-A-1-D	1.78
2	4	Partial	N/A - Warm Springs Park	W-168-A-1-A	0.03
3	4	Partial	N/A - Buena Vista Substation	W-170-A-1-A	0.00
4	4	Partial	N/A - Main Street	W-170-A-1-B-1	0.11
5	4	Partial	N/A - Main Street	W-167-B-1-A	0.17
6	4	Full	459 North Main Street	W-EE-8	0.22
7	4	Full	447 North Main Street	W-EE-7	0.28
8	4	Full	425 North Main Street	W-EE-6	0.16
9	4	Full	16 West 400 North	W-EE-5-A	0.19
10	4	Partial	36 West 400 North	W-EE-4-A	0.01
11	4	Partial	54 West 400 North	W-EE-3-A	0.13
12	4	Full	72 West 400 North	W-EE-2-A	0.23
13	4	Full	90 West 400 North	W-EE-1-A	0.16
14	4	Full	N/A - 400 North	W-167-C	0.02
15	4	Partial	25 East Telegraph Street	W-71	0.01
16	4	Partial	1036 West Red Hills Parkway	W-GSEM-3	0.11
17	4	Partial	990 West Buena Vista Boulevard	W-207-A-2	0.05
18	4	Partial	990 West Buena Vista Boulevard	W-207-A-8	0.00
19	4	Partial	990 West Buena Vista Boulevard	W-207-A-8	0.00
20	4	Partial	912 West Red Cliffs Drive	W-207-A-4	0.01
21	4	Partial	880 West Red Cliffs Drive	W-207-A-5	0.00
22	4	Partial	880 West Red Cliffs Drive	W-207-A-5	0.07
23	4	Partial	912 West Red Cliffs Drive	W-207-A-4	0.05
24	4	Partial	980 West Red Cliffs Drive	W-RCCS-3	0.05
25	4	Partial	980 West Red Cliffs Drive	W-RCCS-2	0.04
26	4	Partial	1004 West Red Cliffs Drive	W-RCCS-1	0.02
27	4	Partial	1064 West Red Cliffs Drive	W-RRMS-1	0.03
28	4	Partial	1086 West Red Cliffs Drive	W-RRMS-2	0.02
29	4	Partial	2725 East Red Cliffs Drive	SG-5-2-15-3324	0.08
30	4	Partial	2722 East Red Cliffs Drive	SG-ESGC-1-A-1	0.03
31	4	Partial	2736 East Red Cliffs Drive	SG-5-2-15-3325	0.06
32	4	Partial	1055 West Red Cliffs Drive	W-ALC-1-4	0.04
33	4	Partial	1025 West Red Cliffs Drive	W-ALC-1-7-A	0.03
34	4	Partial	975 West Red Cliffs Drive	W-ALC-1-6	0.04
35	4	Partial	915 West Red Cliffs Drive	W-ALC-1-2-A	0.02
36	4	Partial	915 West Red Cliffs Drive	W-ALC-1-2-B	0.11
37	4	Partial	260 South Green Springs Drive	W-ALC-1-5-A	0.08
38	4	Partial	875 West Red Cliffs Drive	W-ALC-1-1	0.23
39	4	Partial	969 North 3050 East	SG-MCCC-1-E	0.05
40	4	Partial	955 North 3050 East	SG-MCCC-1-F	0.03

Number	Alternative	Acquisition Type	Address	Parcel Number	Area (Acres)
41	4	Partial	931 North 3050 East	SG-MCCC-1-G	0.02
42	4	Partial	883 North 3050 East	SG-MCCC-1-B-1	0.02
43	4	Partial	708 North 3050 East	SG-5-2-22-112	0.32
44	4	Partial	725 West Telegraph Street	W-RMS-2-B	0.02
45	4	Partial	745 West Telegraph Street	W-RMS-4	0.28
46	4	Partial	865 West Telegraph Street	W-207-A-7	0.11
47	4	Partial	745 West Telegraph Street	W-RMS-4	0.14
48	4	Partial	735 West Telegraph Street	W-RMS-3-B	0.01
49	4	Partial	N/A	W-RMS-3-A	0.26
50	4	Partial	715 West Telegraph Street	W-RMS-3-C	0.03
51	4	Partial	625 West Telegraph Street	W-RMS-1-A-1-A	0.18
52	4	Partial	580 West Telegraph Street	W-SNDL-1	0.01
53	4	Partial	720 West Telegraph Street	W-207-B-N-1-A	0.23
54	4	Partial	740 West Telegraph Street	W-TGMP-1	0.05
55	4	Partial	786 West Telegraph Street	W-TGMP-2	0.06
56	4	Partial	832 West Telegraph Street	W-TGMP-3	0.08
57	4	Partial	844 West Telegraph Street	W-TGMP-4	0.02
58	5	Partial	1036 West Red Hills Parkway	W-GSEM-3	0.11
59	5	Partial	990 West Buena Vista Boulevard	W-207-A-2	0.05
60	5	Partial	990 West Buena Vista Boulevard	W-207-A-8	0.00
61	5	Partial	990 West Buena Vista Boulevard	W-207-A-8	0.00
62	5	Partial	912 West Red Cliffs Drive	W-207-A-4	0.01
63	5	Partial	880 West Red Cliffs Drive	W-207-A-5	0.00
64	5	Partial	880 West Red Cliffs Drive	W-207-A-5	0.07
65	5	Partial	912 West Red Cliffs Drive	W-207-A-4	0.05
66	5	Partial	980 West Red Cliffs Drive	W-RCCS-3	0.05
67	5	Partial	980 West Red Cliffs Drive	W-RCCS-2	0.04
68	5	Partial	1004 West Red Cliffs Drive	W-RCCS-1	0.02
69	5	Partial	1064 West Red Cliffs Drive	W-RRMS-1	0.03
70	5	Partial	1086 West Red Cliffs Drive	W-RRMS-2	0.02
71	5	Partial	2725 East Red Cliffs Drive	SG-5-2-15-3324	0.08
72	5	Partial	2722 East Red Cliffs Drive	SG-ESGC-1-A-1	0.03
73	5	Partial	2736 East Red Cliffs Drive	SG-5-2-15-3325	0.06
74	5	Partial	1055 West Red Cliffs Drive	W-ALC-1-4	0.04
75	5	Partial	1025 West Red Cliffs Drive	W-ALC-1-7-A	0.03
76	5	Partial	975 West Red Cliffs Drive	W-ALC-1-6	0.04
77	5	Partial	915 West Red Cliffs Drive	W-ALC-1-2-A	0.02
78	5	Partial	915 West Red Cliffs Drive	W-ALC-1-2-B	0.11
79	5	Partial	260 South Green Springs Drive	W-ALC-1-5-A	0.08
80	5	Partial	875 West Red Cliffs Drive	W-ALC-1-1	0.23

Number	Alternative	Acquisition Type	Address	Parcel Number	Area (Acres)
81	5	Partial	969 North 3050 East	SG-MCCC-1-E	0.05
82	5	Partial	955 North 3050 East	SG-MCCC-1-F	0.03
83	5	Partial	931 North 3050 East	SG-MCCC-1-G	0.02
84	5	Partial	883 North 3050 East	SG-MCCC-1-B-1	0.02
85	5	Partial	708 North 3050 East	SG-5-2-22-112	0.32
86	5	Partial	725 West Telegraph Street	W-RMS-2-B	0.02
87	5	Partial	745 West Telegraph Street	W-RMS-4	0.28
88	5	Partial	865 West Telegraph Street	W-207-A-7	0.11
89	5	Partial	745 West Telegraph Street	W-RMS-4	0.14
90	5	Partial	735 West Telegraph Street	W-RMS-3-B	0.01
91	5	Partial	N/A	W-RMS-3-A	0.26
92	5	Partial	715 West Telegraph Street	W-RMS-3-C	0.03
93	5	Partial	625 West Telegraph Street	W-RMS-1-A-1-A	0.18
94	5	Partial	580 West Telegraph Street	W-SNDL-1	0.01
95	5	Partial	720 West Telegraph Street	W-207-B-N-1-A	0.23
96	5	Partial	740 West Telegraph Street	W-TGMP-1	0.05
97	5	Partial	786 West Telegraph Street	W-TGMP-2	0.06
98	5	Partial	832 West Telegraph Street	W-TGMP-3	0.08
99	5	Partial	844 West Telegraph Street	W-TGMP-4	0.02
100	5	Partial	81 East Buena Vista Boulevard	W-194-A-1-NP	0.03
101	5	Partial	135 East Buena Vista Boulevard	W-194-D-NP	0.01
102	5	Partial	145 East Buena Vista Boulevard	W-194-E-NP	0.01
103	5	Partial	N/A - Buena Vista Boulevard	W-194-B-NP-1	0.93
104	5	Partial	N/A - 300 East	W-194-A-2-NP	0.34
105	5	Full	605 North 300 East	W-168-E-5-A-1	0.39
106	5	Full	593 North 300 East	W-168-E-2-A	0.18
107	5	Full	583 North 300 East	W-168-E-3	0.13
108	5	Full	563 North 300 East	W-168-E-4	0.21
109	5	Full	521 North 300 East	W-168-D-1-C	0.23
110	5	Full	536 North 300 East	W-WP-2-6	0.18
111	5	Full	554 North 300 East	W-WP-2-5	0.18
112	5	Full	556 North 300 East	W-WP-2-4	0.18
113	5	Full	584 North 300 East	W-WP-2-3	0.17
114	5	Full	588 North 300 East	W-WP-2-2	0.17
115	5	Full	618 North 300 East	W-WP-2-1	0.17
116	5	Full	135 North 300 East	W-117-A-4	0.42
117	5	Full	125 North 300 East	W-117-B-1-B	0.17
118	5	Full	319 East Village Way	W-HW-22	0.17
119	5	Partial	145 North 300 East	W-117-A-2-B	0.03
120	5	Partial	143 North 300 East	W-117-A-1-A	0.03

Number	Alternative	Acquisition Type	Address	Parcel Number	Area (Acres)
121	5	Partial	289 East 100 North	W-117-B-1-A	0.03
122	5	Partial	126 North 300 East	W-HW-21-B	0.01
123	5	Partial	120 North 300 East	W-HW-23	0.01
124	5	Full	85 North 300 East	W-66-B-2-A	0.17
125	5	Full	47 North 300 East	W-64-A-2	0.16
126	5	Partial	322 East Village Way	W-HW-11	0.01
127	5	Full	293 East Telegraph Street	W-64-A-1-A	1.21
128	5	Partial	14 North 300 East	W-HW-1-A	0.00