



Forecast of Development Impacts for BRT Extension

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TABLE OF CONTENTS:

Overview	3
BRT Route Extension	3
Study Areas	3
Methodology	4
Reconciliation of “Top-Down” and “Bottom-Up” Approaches	4
Retail Capture Methodology	7
Development Construction Cost Estimates	8
Original Study Areas	8
BRT Extension	9
Results	10

LIST OF FIGURES AND TABLES:

Figure 1—BRT Extension Study Areas 1 and 2	3
Figure 2—Study Area 1 Maximum Future Development Potential	5
Figure 3—Study Area 1 Reconciled Future Development Potential	5
Figure 4—Study Area 2 Maximum Future Development Potential	6
Figure 5—Study Area 2 Reconciled Future Development Potential	6
Table 1—Historical Development Activity in Study Areas (2002-2012)	4
Table 2—Historical Development Activity in Omaha Region vs. Study Areas	4
Table 3—Baseline Regional and Study Area Capture Forecast: Residential, Office and Hotel Demand	4
Table 4—Calculation of Study Area Office and Residential Multipliers with Transit Improvements	4
Table 5—Study Area Capture Forecast with Transit Improvements	7
Table 6—Maximum Development Capacity by Land Use	7
Table 7—Reconciled Forecast of Development for Each Study Area	7
Table 8—Reconciled Forecast for Each Alternative including BRT Extension to Westroads	8
Table 9—Development Construction Cost Estimate for Alternatives 1-3	8
Table 10—Baseline Development Construction Cost Estimate for 42 nd Street to North Downtown	9
Table 11—Net Gain for Development Construction Costs for 42 nd Street to North Downtown	9
Table 12—Breakdown of Development Construction Costs for new Study Areas	9
Table 13—Development Construction Cost Estimate for Alternatives 1-3 including BRT Extension to Westroads	9
Table 14—Net Gain for Construction Costs including BRT Extension to Westroads	10

OVERVIEW

HDR was asked by the City of Omaha and Omaha Metro to forecast the impact of BRT on real estate development for two proposed route extensions to the Central Omaha Transit Alternatives Analysis. This study serves as a supplement to the *SB Friedman* study¹ on the economic development impacts of BRT and Streetcar alternatives. The following report highlights the impacts of BRT on the new study areas and the methods employed. The report is organized into the following sections:

- A definition of the BRT Route Extension and study areas, as well as an analysis of the historical development within the study areas.
- The methods used to calculate the increased future development potential within each study area resulting from BRT.
- An estimate of the future development impact that a BRT route extension will likely have.
- Development Construction Cost Estimates for both the original study area and for the two BRT route extensions.

BRT ROUTE EXTENSION

The three alternatives under review were studied in further detail to consider bus rapid transit (BRT) being carried farther down Dodge Street. The two route extensions are as follows:

Extension 1: Continuing BRT west on Dodge Street from the terminus of the original study area (42nd Street) to 72nd Street and Dodge Street, with stops at 50th Street and Dodge Street, 62nd Street and Dodge Street, and 72nd Street and Dodge Street.

Extension 2: Continuing the BRT west on Dodge Street from the end of Extension 1 (72nd Street) to the Westroads Mall, where the BRT would loop west on California Street, north on 102nd Street, east on Nicholas Street, south on 98th Street, and south again on Regency Parkway to continue onto Dodge Street eastbound. This route would include stops at 76th Street and Dodge Street, 84th Street and Dodge Street, 90th Street and Dodge Street, 96th Street and Dodge Street, 102nd Street and Nicholas Street, and on the west side of 98th Street near the Westroads Mall parking garage.

STUDY AREAS

In order to calculate the development impacts of BRT service along the Dodge Street corridor, the analysis focused on the immediate area around each stop. The three block extent around the transit line used in the original study was not applicable for the BRT extension due to the irregular size of the blocks and the larger distances between stops. Instead, the best study area was determined to be a one-quarter mile radius around each stop. This distance corresponds with a five minute walk, which is the average reasonable distance a person is expected to travel on foot, and is shown in **Figure 1**.

Figure 1. BRT Extension Study Areas 1 and 2



¹ *SB Friedman*, Central Omaha Transit Alternatives Analysis—Forecast of Development Impacts of BRT and Streetcar Alternatives, Memorandum, July 19, 2013

METHODOLOGY

In order to maintain consistency with the original study, many of the same methodologies were employed. Regional capture from the study areas from the past ten years was used to create a baseline study area capture rate for residential, office, and hotel uses (**Tables 1-3**). In **Table 4**, a forecast for the future development impacts of BRT was determined by applying the Omaha BRT multiplier produced by *SB Friedman*¹ to these capture rates.

Table 1. Historical Development Activity in Study Areas (2002—2012)

Land Use	Study Area 1 Units or SF	Study Area 2 Units or SF
Residential	11	0
Office	8,400	282,900
Hotel	0	102
Retail/Service	160,785	256,000

Table 2. Historical Development Activity in Omaha Region vs. Study Areas

Land Use	Region Units or SF	Study Area 1		Study Area 2	
		Units or SF	Capture Rate	Units or SF	Capture Rate
Residential	52,800	11	0.02%	0	0.00%
Office	6,800,000	8,400	0.12%	282,900	4.16%
Hotel	4,400	0	0.00%	102	2.32%

Table 3. Baseline Regional and Study Area Capture Forecast: Residential, Office and Hotel Demand

Land Use	Region Units or SF	Study Area 1		Study Area 2	
		Capture Rate	Market Demand	Units or SF	Capture Rate
Residential	65,000	0.02%	13	0.00%	0
Office	14,900,000	0.12%	17,880	4.16%	619,840
Hotel	5,600	0.00%	0	2.32%	130

Table 4. Calculation of Study Area Office and Residential Multipliers with Transit Improvements

Capture Rate Without Transit		BRT Multiplier Selected for Omaha	New Capture Rate with Transit	
Study Area 1	Study Area 2		Study Area 1	Study Area 2
0.02%	0.00%	1.5x	0.03%	0.00%
0.12%	4.16%	1.1x	0.13%	4.58%
0.00%	2.32%	1x	0.00%	2.32%

RECONCILIATION OF “TOP-DOWN” AND “BOTTOM-UP” APPROACHES

Table 5 shows the *SB Friedman*¹ capture rates applied to Study Areas 1 and 2 to arrive at the market demand for each study area with transit. HDR identified the maximum development potential for each study area, highlighting sites which may transition to a higher density use over time. These sites are identified in **Figure 2** and **Figure 4**, and they are calculated in **Table 6**. Using the numbers developed in the “top-down” forecast, HDR reconciled the maximum development potential with the market demand by selecting sites within each study area that are the most susceptible to change. These sites are mapped out in **Figure 3** and **Figure 5**.

¹ *SB Friedman*, Central Omaha Transit Alternatives Analysis—Forecast of Development Impacts of BRT and Streetcar Alternatives, Memorandum, July 19, 2013: 12

Figure 2. Study Area 1 Maximum Future Development Potential

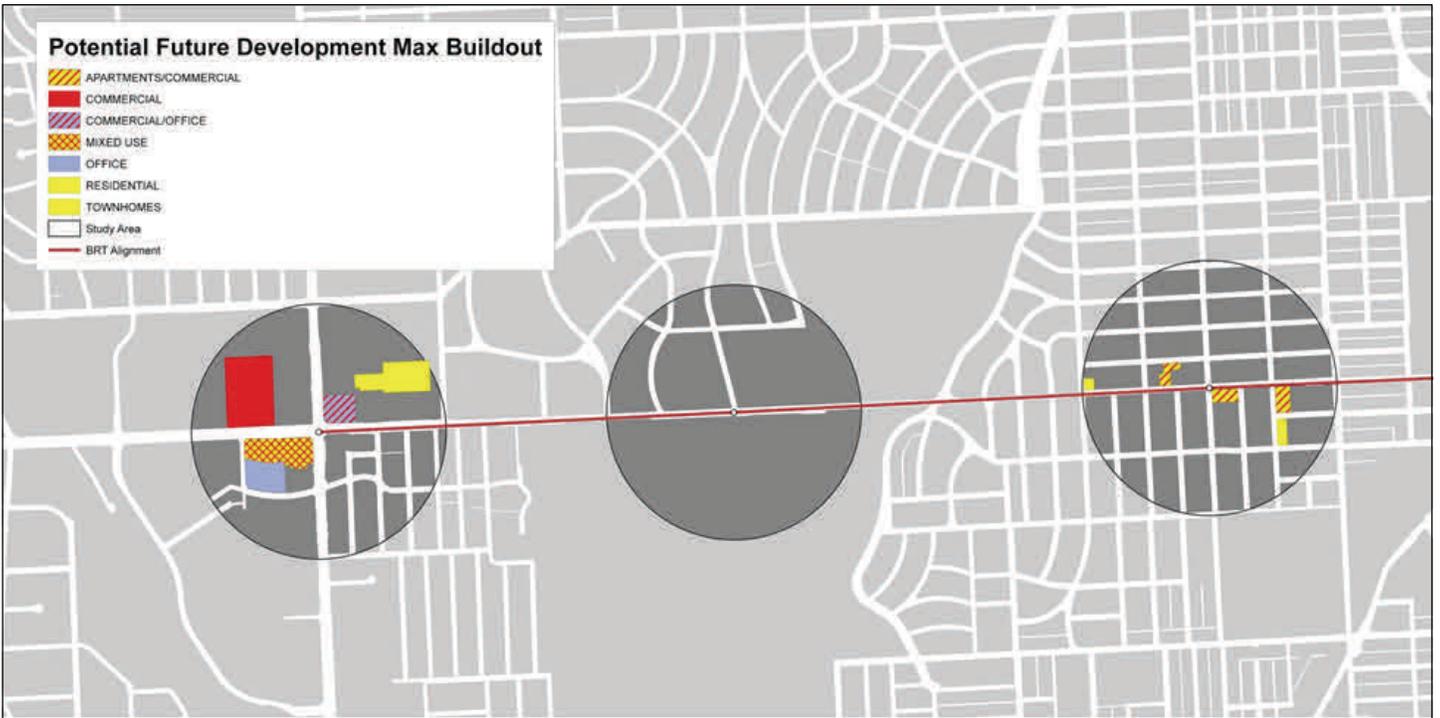


Figure 3. Study Area 1 Reconciled Future Development Potential



Figure 4. Study Area 2 Maximum Future Development Potential

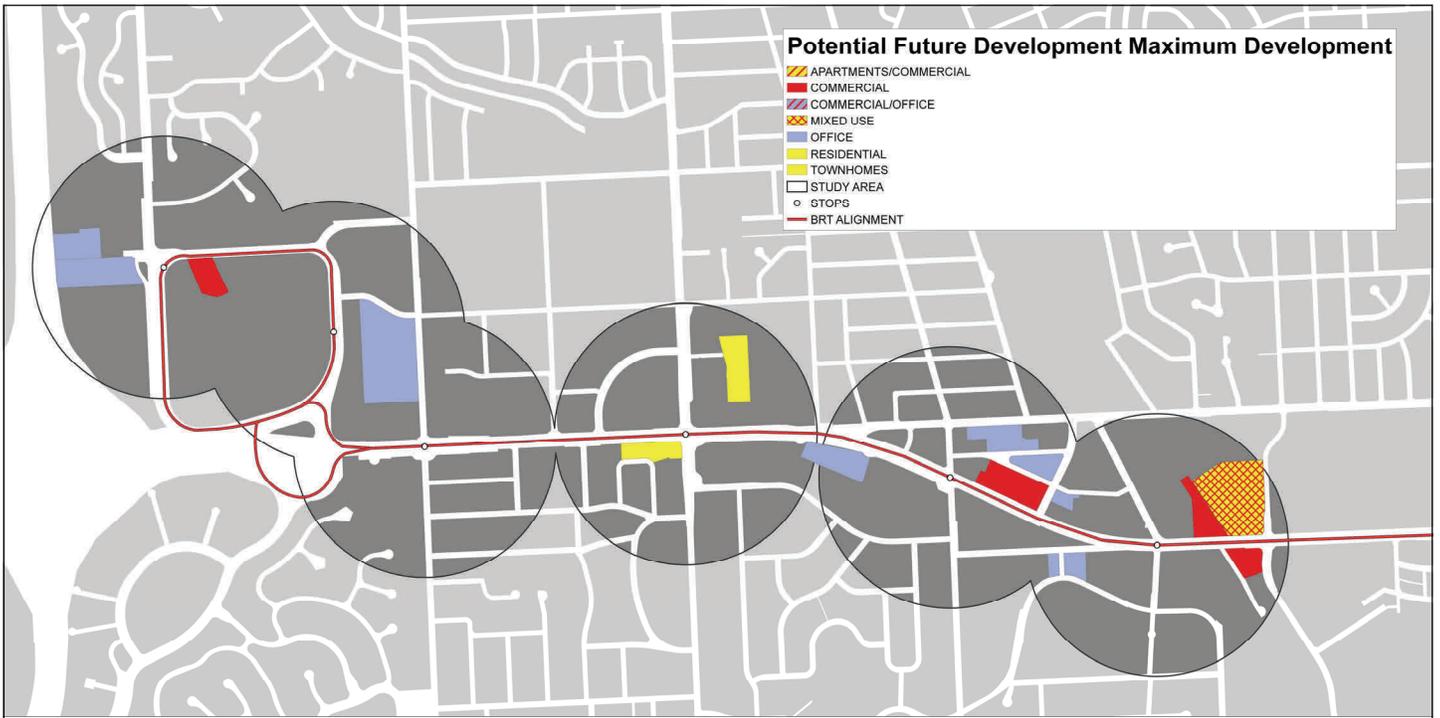
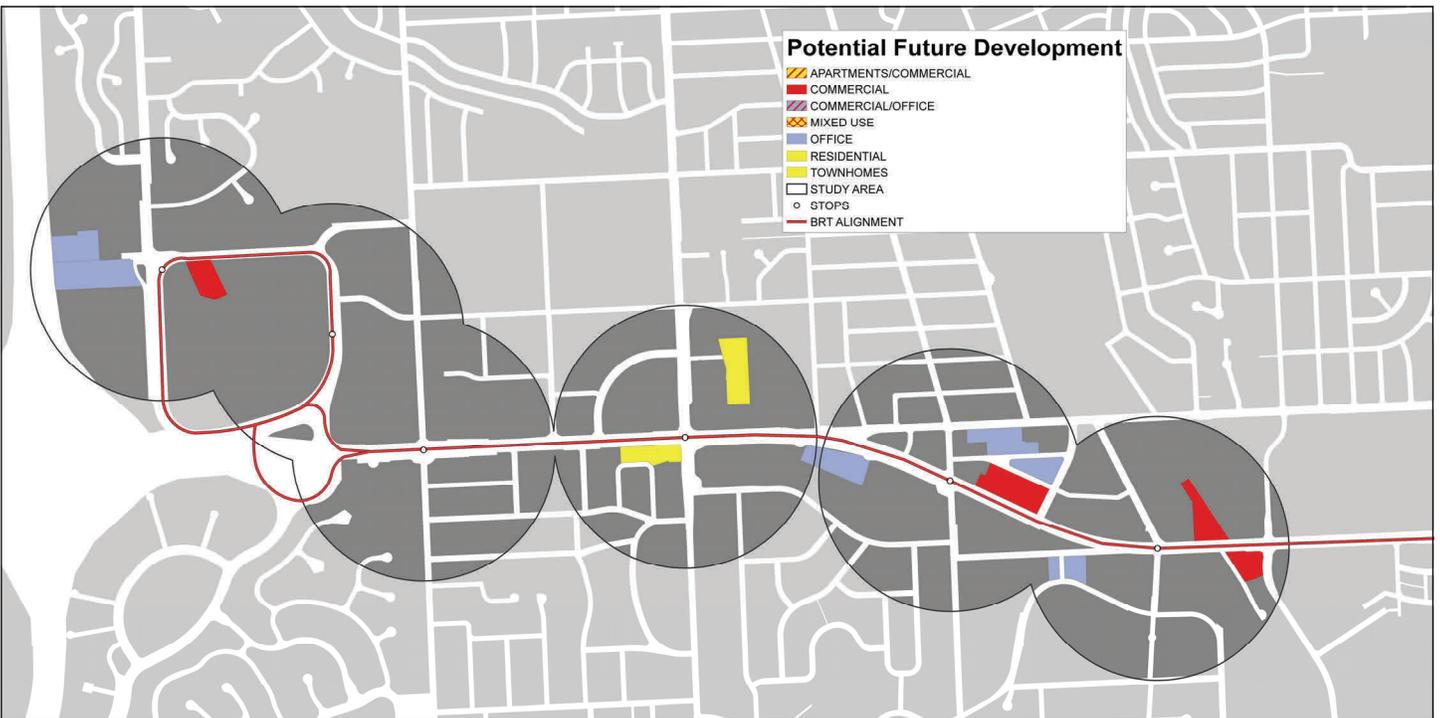


Figure 5. Study Area 2 Reconciled Future Development Potential



RETAIL CAPTURE METHODOLOGY

The retail model developed by *SB Friedman*¹ projects retail demand from three sources: new residents, new office workers, and regional demand. This approach was used to estimate retail demand from new office workers and residents within the study areas. Combined with estimates for new regional retail within the study area, this number provides a retail projection for Study Area 1. However, the unique regional character of retail within Study Area 2 made accurate numbers difficult to project and therefore retail projections for Study Area 2 were omitted from the report.

Table 5. Study Area Capture Forecast with Transit Improvements

Land Use	Regional Projections	Study Area 1		Study Area 2	
	Units or SF	Capture Rate	Market Demand	Capture Rate	Market Demand
Residential	65,000	0.03%	20	0.00%	0
Office	14,900,000	0.13%	19,370	4.58%	682,420
Hotel	5,600	0.00%	0	2.32%	130
Retail/Service	N/A	N/A	247,900*	N/A	N/A**

*The retail projections modeled for this study are based on retail and services used by the residential and office development in the study areas, as well as regional spending by outside visitors.

** Due to the unique nature and character of the 76th to Westroads Mall corridor, accurate retail numbers were difficult to project and therefore omitted from this report.

Table 6. Maximum Development Capacity by Land Use

Land Use	Study Area 1	Study Area 2
Residential	216 units	0 units
Office	80,500 SF	824,000 SF
Hotel	0 units	180 units
Retail/Service	279,300 SF	81,100 SF

Table 7. Reconciled Forecast of Development for Each Study Area

Land Use	Study Area 1			Study Area 2		
	Market Demand with Transit	Site Capacity	Forecast	Market Demand with Transit	Site Capacity	Forecast
Residential	20	216	20	0	110	0
Office	19,370	80,500	19,370	682,420	824,000	682,420
Hotel	0	100	0	130	180	130
Retail/Service	247,900	279,300	247,900	N/A	81,100	N/A**

** Due to the unique nature and character of the 76th to Westroads Mall corridor, accurate retail numbers were difficult to project and therefore omitted from this report.

¹ *SB Friedman*, Central Omaha Transit Alternatives Analysis—Forecast of Development Impacts of BRT and Streetcar Alternatives, Memorandum, July 19, 2013: 12

Table 7 shows the reconciled forecast for each of the BRT extensions. As stated in the *SB Friedman* Report, the reconciled forecast is achieved by taking the market demand and the site capacity, and choosing the lesser of the two numbers¹. **Table 8** summarizes the results of the reconciled approach for Alternative 1 from Westroads to North Downtown, Alternative 2 from Westroads to North Downtown, and Alternative 3 from 42nd Street to North Downtown.

Table 8. Reconciled Forecast For Each Alternative including BRT Extension to Westroads

Land Use	Alternative 1 (BRT)			Alternative 2 (BRT)			Alternative 3 (BRT)		
	Westroads to North Downtown			Westroads to North Downtown			42nd to North Downtown		
	Market Demand	Site Capacity	Forecast	Market Demand	Site Capacity	Forecast	Market Demand	Site Capacity	Forecast
Residential	3,120	3,826	3,120	2,920	4,426	2,920	4,200	4,100	4,100
Office	4,001,790	5,704,500	4,001,790	4,001,790	6,804,500	4,001,790	5,400,000	5,900,000	5,400,000
Hotel	1,230	1,580	1,230	1,230	1,580	1,230	1,100	1,400	1,100
Retail/Service	588,900	1,660,400	588,900	583,900	1,960,400	583,900	490,000	1,600,000	490,000

DEVELOPMENT CONSTRUCTION COST ESTIMATES

Original Study Areas

Using the reconciled forecast development numbers, the project team determined the construction cost estimates for new construction occurring within the study areas. This number is beneficial because it represents private development dollars that are invested into the study areas. In order to arrive at the construction cost estimate, the cost per square foot of development was used. Standard sizes were used for residential units and hotel rooms to convert them into average square feet per each. **Table 9** breaks down the construction cost by land use for the three alternatives. **Table 10** shows the baseline of development without transit. **Table 11** highlights the net gain of development investment for each alternative over the projected baseline.

Table 9. Development Construction Cost Estimate for Alternatives 1-3

Land Use	Alternative 1 (BRT)		Alternative 2 (BRT)		Alternative 3 (Streetcar)	
	42nd to North Downtown		42nd to North Downtown		42nd to North Downtown	
	Forecast	Development Investment (Construction Cost)	Forecast	Development Investment (Construction Cost)	Forecast	Development Investment (Construction Cost)
Residential (units)	3,100	\$ 651,000,000	2,900	\$ 609,000,000	4,100	\$ 861,000,000
Office	3,300,000	\$ 693,000,000	3,300,000	\$ 693,000,000	5,400,000	\$ 1,134,000,000
Hotel (rooms)	1,100	\$ 58,987,500	1,100	\$ 58,987,500	1,100	\$ 58,987,500
Retail/Service	341,000	\$ 49,445,000	336,000	\$ 48,720,000	490,000	\$ 71,050,000
TOTAL		\$ 1,452,432,500		\$ 1,409,707,500		\$ 2,125,037,500

Calculations Used:	
Construction Cost per SF:	
Office	\$ 210
Retail	\$ 145
Residential	\$ 175
Hotel	\$ 165
Typ Residential Unit	1200 sf
Typ Hotel Room	325 sf

¹ *SB Friedman*, Central Omaha Transit Alternatives Analysis—Forecast of Development Impacts of BRT and Streetcar Alternatives, Memorandum, July 19, 2013: 13

Table 10. Baseline Development Construction Cost Estimate for 42nd Street to North Downtown

Land Use	Baseline	
	Forecast	Development Investment
Residential (units)	2,000	\$ 420,000,000
Office	2,980,000	\$ 625,800,000
Hotel (rooms)	1,100	\$ 58,987,500
Retail/Service	296,000	\$ 42,920,000
TOTAL		\$ 1,147,707,500

Table 11. Net Gain for Development Construction Costs for 42nd Street to North Downtown

Net Gain:	
Alternative 1	\$ 304,725,000
Alternative 2	\$ 262,000,000
Alternative 3	\$ 977,330,000

BRT Extension

Table 12 separates the BRT extension study areas to show their independent development potential. Both BRT extensions are combined into the original BRT route in **Table 13**, which compares the development investment potential for Alternative 1 from North Downtown to the Westroads Mall, Alternative 2 from North Downtown to the Westroads Mall, and Alternative 3 from North Downtown to 42nd Street and Dodge Street. **Table 14** shows the net gain of development investment over the baseline for the two extended BRT alternatives as well as the original streetcar alternative.

Table 12. Breakdown of Development Construction Costs for new Study Areas

Land Use	Study Area 1 50th to 72nd		Study Area 2 76th to Westroads	
	Forecast	Development Investment	Forecast	Development Investment
	Residential (units)	20	\$ 4,200,000	0
Office	19,370	\$ 4,067,700	682,420	\$ 143,308,200
Hotel (rooms)	0	\$ -	130	\$ 6,971,250
Retail/Service	247,900	\$ 35,945,500	N/A	N/A
TOTAL		\$ 44,213,200		\$ 150,279,450

Table 13. Development Construction Cost Estimate for Alternatives 1-3 including BRT Extension to Westroads

Land Use	Alternative 1 (BRT) Westroads to North Downtown		Alternative 2 (BRT) Westroads to North Downtown		Alternative 3 (Streetcar) 42nd to North Downtown	
	Forecast	Development Investment	Forecast	Development Investment	Forecast	Development Investment
	Residential (units)	3,120	\$ 655,200,000	2,920	\$ 613,200,000	4,100
Office	4,001,790	\$ 840,375,900	4,001,790	\$ 840,375,900	5,400,000	\$ 1,134,000,000
Hotel (rooms)	1,230	\$ 65,958,750	1,230	\$ 65,958,750	1,100	\$ 58,987,500
Retail/Service	588,900	\$ 85,390,500	583,900	\$ 84,665,500	490,000	\$ 71,050,000
TOTAL		\$ 1,646,925,150		\$ 1,604,200,150	-	\$ 2,125,037,500

Table 14. Net Gain for Construction Costs including BRT Extension to Westroads

Net Gain:	
Alternative 1 (Westroads to NoDo)	\$ 499,217,650
Alternative 2 (Westroads to NoDo)	\$ 456,492,650
Alternative 3 (42nd Street to NoDo)	\$ 977,330,000

RESULTS

The results from the extension of this study shows that while extending BRT to Westroads Mall is beneficial for comprehensive transit connectivity and does increase development, the development potential for transit west of 42nd Street is limited when compared to the corridor to the east. This limitation occurs partially because the transit route runs through established neighborhoods with little land available for redevelopment. Limited development potential further west along the route also occurs because of existing land development patterns, land values, limited physical space and lack of additional financial incentives to develop the land at a much higher intensity than its current use.