Lehi City

Transportation Impact Fee Analysis

ZIONS PUBLIC FINANCE, INC.

May 12, 2016

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EXECUTIVE SUMMARY

Lehi City, Utah (the City) recently commissioned Bowen Collins & Associates (BC&A) to prepare the *Lehi City Transportation Impact Fee Facilities Plan* (IFFP) dated September 2015. The City has also retained Zions Public Finance, Inc. (Zions) to calculate the City's transportation impact fees in accordance with the IFFP and Utah State Law. An impact fee is a one-time charge to new development to reimburse the City for the cost of developing roadway infrastructure that will serve future development.

The impact fee will be assessed to a single, city-wide service area (Service Area). As the City does not construct roadways outside of the impact fee service area, only activity within the service area will be considered in the calculation of the updated impact fee. Traffic from areas outside of the City, referred to as pass through traffic is considered non-impact fee qualifying demand. The roadways are planned with extra capacity for pass through traffic but the extra cost associated with expanding roads to accommodate pass through traffic cannot be funded with impact fees. The cost of pass through capacity must be funded by revenue other than impact fees.

The City has expended approximately $34,785,919 (1993 estimate) to construct City roadway facilities and will need to build another $19,756,719 in the next ten years. The total impact fee qualifying cost of ten year improvements is estimated to be $8,011,400, or about 41% of the anticipated cost of qualifying improvements. The City has no debt outstanding related to the construction of roadways; however, the City has identified two potential future transportation bonds. The debt service associated with these future debt issues has not been included in the impact fee calculation at this time.

FIGURE ES.1: COST PER TRIP

Component	Total Cost	% That will Serve Ten Year Demand	Dollar Amount that will Serve Ten Year Demand	Ten Year Demand (Trips)	Cost per Trip
Roadway Impact Fee					
Future 10 Year Capital Projects	$ 19,756,719	40.55%	$ 8,011,400	66,107	$ 121
Future Growth Related Debt to be Issued - Interest Only	-	0.00%	-	66,107	-
Existing Infrastructure	9,120,910	0.00%	-	66,107	-
Existing Roads Related Debt - INTEREST ONLY	-	0.00%	-	66,107	-
Roadway Impact Fee Subtotal	**$ 28,877,629**		**$ 8,011,400**		**$ 121.19**
Professional Services/ Credits					
Unspent Impact Fee Funds	-	0.00%	$ -	66,107	-
Professional Services / Credits	40,000	100%	40,000	66,107	1
Professional Services /Credits Subtotal	**40,000**		**40,000**		**0.61**
Total Impact Fee Per Trip	**$ 28,917,629**		**$ 8,051,400**		**$ 121.79**

Recommended Transportation Impact Fees

The impact fees to be paid by different types of development are assessed according to the number of trips generated. To calculate the total impact fee for a development, the impact fee per trip (as calculated above) is multiplied by the number of trips the development type generates. The impact fee to be assessed for

Single Family or Multi-Family development is shown in Figure ES.2. All other development types will be assessed an impact fee according to trip generation as calculated by the City at the time of building permit issuance. City guidelines for generating trip rates for various other land use categories are provided in a memorandum prepared by Hales Engineering. This memorandum has been included as an appendix to this report.

FIGURE ES.2: MAXIMUM TRANSPORTATION IMPACT FEE SCHEDULE

Transportation Impact Fees			
Development Type	Net Adjusted Trips	Cost per Trip	Impact Fee
Single Family Residential (per Dwelling Unit)	9.55	$ 121.79	$ 1,163
Multi-Family Residential (per Dwelling Unit)	5.81	121.79	708
All Other Development Types	Cost per trip of $121.79 multiplied by # of trips generated		

The recommended impact fee structure presented in this analysis has been prepared to satisfy the Impact Fees Act, Utah Code Ann. § 11-36-101 et. Seq. (the "Act"), and represents the maximum transportation impact fees that the City may assess within the Service Area. The City will be required to use other revenue sources to fund projects identified in the IFFP that constitute repair and replacement, cure any existing deficiencies, or maintain the existing level of service for current users.

CHAPTER 1: OVERVIEW OF THE TRANSPORTATION IMPACT FEES

What is an Impact Fee?

An impact fee is a one-time fee, not a tax, charged to new development to recover the City's cost of constructing roadway facilities with capacity that will be utilized by new growth. The fee is assessed at the time of building permit issuance as a condition of development approval. The calculation of the impact fee must strictly follow the Impact Fees Act to ensure that the fee is equitable, fair, and legally defensible.

This analysis provides documentation that there is a fair comparison, or rational nexus, between the impact fee charged to new development and the impact on the capacity of the system. Impact fees are charged to different types of development and the impact fee is scaled according to different levels of demand.

Costs Included in the Impact Fee

The primary roadway facilities considered in this analysis are the acquisition of right of way, construction of roadways, intersection improvements, and signaling. Other roadway improvements not listed may be qualifying if they are required to expand roadway capacity for new growth and are funded by the City.

The impact fees proposed in the Transportation Impact Fee Analysis are calculated based upon the costs of constructing:

- New facilities required to maintain (but not exceed) the proposed level of service identified in the IFFP; only those expected to be built within ten years are considered in the final calculations of the impact fee
- Interest costs related to existing and future debt associated with facilities that will serve new development
- Historic costs of existing facilities that will serve new development
- Cost of professional services for engineering, planning, and preparation of the impact fee facilities plan and impact fee analysis

Costs Not Included in the Impact Fee

- Operational and maintenance costs
- Cost of facilities constructed beyond 10 years
- Costs of UDOT or county roads that have not been funded by the City
- Cost of facilities funded by grants or other funds which the City is not required to repay
- Cost of renovating or reconstructing facilities which do not provide new capacity or needed enhancement of services to serve future development

How Are the Impact Fees Calculated?

A fair roadway impact fee is calculated by dividing the cost of unused capacity in existing and future roadway facilities by the number of new trip ends that the unused capacity can accommodate. Only the cost of capacity that is needed to serve the projected growth that will occur in the next ten years is included in the fee. The proposed impact fees are comprised of the costs of future capital projects that will provide

future transportation capacity within the Service Area and professional expenses pertaining to the regular update of the IFFP and impact fee analysis.

Description of the Service Area

The impact fee has been calculated for one service area which is comprised of the incorporated boundaries of Lehi City. The impact fees exclude the costs of capacity related to pass-through traffic that originates and ends outside of the City boundaries. The impact fee only includes the costs of capacity that is required to serve Lehi residents.

Cost per Trip End

The unit of measurement used for this transportation impact fee analysis is a cost per trip end based on ADT volumes. A trip end is a single or one-directional vehicle movement from a particular site or development to the end point or destination. This analysis uses trips that are attracted to a particular land use. The analysis considers only trips that are entering and that are primary trips. Primary trips are the trip ends to a place that is considered to be the intended destination of the trip. Stops along the way to the primary destination are called pass-by trips. An example of a primary trip might be a car that leaves home to head to a grocery store. If the car stops at a gas station along the way on the primary route to the grocery store then the visit to the gas station is a pass by trip. If the car leaves the primary route to the grocery store and drives along an adjacent route to stop at a gas station along the way then this is a diverted trip and is equivalent to a pass-by trip and not a primary trip.

Pass by trips, including diverted trips (trips that are diverted from nearby roadways onto adjacent streets), are not included in the impact fee as they are an intermediate stop on the way to a primary destination. Trip end analysis in this impact fee analysis focuses on primary trips which are the trip ends arriving at the primary destination.

The general impact fee methodology divides the cost of available capacity in existing and future capital projects by the number of existing and future trips the projects can serve. The impact fee is expressed in terms of a cost per trip end. According to the IFFP, a single family residential unit generates 9.55 trip ends per day.

Project Costs and Financing

The City plans a number of transportation projects to meet future demand. A portion of the improvements have been allocated to ten year growth and included in the impact fee. It is anticipated that the City will issue some debt to appropriately fund the projects but the debt service for future transportation bonds has not been included in the impact fee at this time.

CHAPTER 2: IMPACT FROM GROWTH UPON THE CITY'S FACILITIES AND LEVEL OF SERVICE

Future Demand within the Service Area

Transportation demand within the City has been slowly increasing since the recent recession and will increase as development activity rebounds and homes and businesses are built. Currently the City has 240,476 daily trip ends which are expected to grow by 66,107 to a total of 306,583 daily trip ends by 2023. The trip end calculation is net of the pass by trips that are not generated by Lehi City residents. Only the increased demand from new Lehi City growth will be included in impact fee calculations.

FIGURE 2.1: PROJECTED GROWTH IN TRIP ENDS

Year	Lehi Population	Annualized Growth Rate	Total Daily Trip Ends	Annualized Growth
2010	47,715			
2013	53,561	3.93%	240,476	
2023	68,285	2.46%	306,583	2%
Full Development	133,800	1.83%	547,058	1.58%

Source: 2015 Transportation Impact Fee Analysis Prepared by Bowen Collins & Associates

- Assumes Total Daily Trip Ends

- 547,058 already takes into account the reduction for pass-by

Level of Service Analysis

The Utah State Impact Fees Act makes it clear that impact fees cannot be used to increase the quality of public services and infrastructure for existing property owners at the expense of incoming property owners. Impact fees can only be used to perpetuate the same quality of infrastructure and services that are currently offered. In order to demonstrate that this is the case, it has become a common practice for entities assessing an impact fee to identity a "Level of Service" (LOS) which cannot be exceeded. The LOS is, simply stated, the capacity in existing public services and infrastructure as required to serve existing property owners.

Transportation level of service is a measure of congestion and identified in the IFFP as ranging from LOS A (free-flow traffic operations) to LOS F (where conditions are such that demand exceeds capacity). According to Lehi City municipal code, all local and collector roads are required to maintain an LOS C or better. For arterial roads the City's Transportation Master Plan was determined to be LOS D, which is based on UDOT's Roadway Design Manual of Instruction. Allowing LOS D for arterial roads will apply to both existing and future development.

Pass Through Traffic

It is important to note that some of the roadway infrastructure usage in the City is due to pass through traffic, or traffic that has a destination beyond the impact fee service area. Demand associated with pass through is not associated with existing or current Lehi City residents. In Lehi, most of the pass through traffic on City streets is associated roads that provide access to Eagle Mountain and Saratoga Springs. These pass

through trips will be accounted for in the analysis as non-impact fee qualifying trips. Pass through traffic on roadways such as I-15 or Pioneer Crossing are not included in this analysis since they are owned and funded by UDOT rather than Lehi City.

Pass-by Traffic

Pass-by traffic are the stops along the route to a primary destination. An example would be a stop at a convenience store on the way to another destination such as home or work. For the purpose of this analysis, the final impact fee will be based only on trips to primary destinations in order to classify trips according to which type of land use generated the trip.

CHAPTER 3: FUTURE AND HISTORIC CAPITAL PROJECTS COSTS

The Impact Fees Act allows for the inclusion of various cost components in the calculation of the impact fees. Impact fees can only fund system improvements which are defined as facilities or lines that contribute to the entire system's capacity rather than just to a small, localized area. The City does not have any debt outstanding related to the transportation system but does anticipate issuing two future transportation bonds. Interest related to the future bonds will be included in the impact fee calculation after bonds have been issued and a subsequent impact fee update is completed.

Future Project Capacities Available for Growth

The costs of future capital projects are defined in the corresponding Impact Fees Facilities Plan prepared by BC&A and are summarized in Figure 3.1. Some of the projects the City has planned will not be built to full planned width and number of lanes within the impact fee planning horizon. Only the improvements that will be constructed within the planning window are included in the impact fee calculation. Planned projects include: road widenings, construction of traffic signals and other growth-related system improvements.

FIGURE 3.1: CAPITAL PROJECT COSTS TO BE FUNDED THROUGH IMPACT FEES

Project Name	Location	Year to be Constructed	2014 Cost	Construction Costs	Cost to Existing	Cost to 10 Year Growth	Cost to 10-Year Growth in Passthrough	Cost to Growth Beyond 10 Years
98' Major Arterial	Triumph Blvd	2015	2,256,600	2,256,600	-	727,017	14,458	1,515,125
98' Major Arterial	Triumph Blvd	2015	1,340,214	1,340,214	-	416,073	8,588	915,555
80' Minor Collector - Cycle Track	700 South	2019	172,786	172,786	-	129,127	462	43,197
80' Minor Collector - Cycle Track	700 South	2019	125,755	125,755	-	93,980	336	31,439
102' Major Arterial - Buffered Bike Lane	3600 West	2016	3,241,228	3,241,228	254,556	1,472,070	110,964	1,403,638
80' Major Collector - Buffered Bike Lane	2600 North	2016	1,504,543	1,504,543	140,504	1,364,018	21	-
80' Major Collector - Buffered Bike Lane	1500 North	2016	1,011,931	1,011,931	65,689	595,544	96,243	254,455
80' Major Arterial	1200 West	2017	205,579	205,579	46,649	63,457	2,485	92,988
80' Major Arterial	1200 West	2017	118,431	118,431	20,427	34,325	1,313	62,366
80' Major Arterial	1200 West	2017	126,625	126,625	21,840	36,700	1,403	66,681
80' Major Collector - Buffered Bike Lane	3200 North	2018	961,483	961,483	-	560,827	38	400,618
TM Typical Minor Arterial	Traverse Mtn Blvd	2017	671,985	671,985	-	119,844	-	552,141
Commuter Lane Off Ramp	Center St	2019	1,100,000	1,100,000	-	326,698	2	773,300
Accel/Deccel Lanes onto SR 92	Center St	2019	100,800	100,800	-	29,937	-	70,862
Misc. Traffic Signals	Traffic Signals	2015-2019	1,000,000	1,000,000	105,379	346,750	14,140	533,730
Misc. Road Widening	Road Widening	2015-2024	1,250,000	1,250,000	-	206,171	8,880	1,034,949
80' Major Arterial	2300 West	2021	302,052	302,052	34,969	69,480	5,388	192,215
80' Major Arterial	2300 West	2021	295,557	295,557	32,617	70,076	4,783	188,082
80' Minor Collector - Cycle Track	700 South	2021	150,336	150,336	-	70,974	41,778	37,584
66' Minor Collector	4600 West	2020	168,014	168,014	-	66,869	1	101,144
66' Minor Collector	4800 West	2020	187,426	187,426	-	74,595	-	112,830
80' Major Arterial	N Frontage Rd	2020	1,223,504	1,223,504	64,591	599,699	35	559,178
Traverse Mountain Flight Park Road	Flight Park Rd	2024	1,350,196	1,350,196	-	240,799	-	1,109,397
Traverse Mountain Frontage Road	N Frontage Rd	2023	891,674	891,674	66,268	296,370	3,777	525,258
			$ 19,756,719	$ 19,756,719	$ 853,490	$ 8,011,400	$ 315,097	$ 10,576,732
Ten Year Total			$ 19,756,719	$ 19,756,719	$ 853,490	$ 8,011,400	$ 315,097	$ 10,576,732

Impact Fee Analysis/ IFFP Updates

As development occurs and capital project planning is periodically revised, the future lists of capital projects and their costs may be different than the information utilized in this analysis. For this reason, it is assumed that the City will perform updates to the analysis every three years. The cost of preparing this analysis, the impact fee facilities plan and the future costs of updating both documents has been included in the impact fee calculations. A 2015 cost of updating the impact fee facilities plan and impact fee analysis of $40,000 which has also been included in the impact fee calculation.

Bond Debt Service and Grant Funds

The City does not currently have any outstanding transportation related debt. In the future, the City may issue future bonds to help fund the projects but the interest on the bonds will be included in the impact fee once bonds are issued and a subsequent impact fee update is complete.

CHAPTER 4: PROPORTIONATE SHARE ANALYSIS

The proportionate share analysis considers the manner of funding utilized for future transportation public facilities. Historically the City has funded existing infrastructure with sources including the following:

- Property Tax Revenues
- Sales Tax Revenues
- State B and C Road Funds
- Impact Fees
- Bond Proceeds

In the future, the City will primarily rely upon property and sales tax revenues to fund the maintenance of the road system. The City's expansionary costs will be covered primarily with impact fees. Some general fund revenues may be used to pay the debt service of the bonds in years when impact fee revenues are insufficient to cover the annual payment to principal and interest. If General Fund revenues are used to pay impact fee qualifying costs (due to a shortfall in impact fee revenues) then the balance owed to the general fund will be tracked and the general fund will be repaid with impact fees.

Grant funding for impact fee qualifying transportation projects are not anticipated. However, if they are received, future impact fees will be discounted according to the size of grant and what it will be intended to fund.

Developer Credits

If a project included in the Impact Fee Facilities Plan (or a project that will offset the demand for a system improvement that is listed in the IFFP) is constructed by a developer then that developer is entitled to a credit against impact fees owed. (Utah Impact Fees Act, 11-36a-304(2)(f)). There are currently no situations in this analysis or projects that would entitle a developer to a credit.

Time-Price Differential

Utah Code 11-36a-301(2)(h) allows for the inclusion of a time-price differential in order to create fairness for amounts paid at different times. Typically time-price differential is considered to be an inflationary component added to capital project costs to account for construction inflation for future projects. An inflationary component is excluded from this analysis given the uncertain future rates of capital project cost inflation.

FIGURE 4.1: TRANSPORTATION IMPACT FEE CALCULATION

Component	Total Cost	% That will Serve Ten Year Demand	Dollar Amount that will Serve Ten Year Demand	Ten Year Demand (Trips)	Cost per Trip
Roadway Impact Fee					
Future 10 Year Capital Projects	$ 19,756,719	40.55%	$ 8,011,400	66,107	$ 121
Future Growth Related Debt to be Issued - Interest Only	-	0.00%	-	66,107	-
Existing Infrastructure	9,120,910	0.00%	-	66,107	-
Existing Roads Related Debt - INTEREST ONLY	-	0.00%	-	66,107	-
Roadway Impact Fee Subtotal	**$ 28,877,629**		**$ 8,011,400**		**$ 121.19**
Professional Services/ Credits					
Unspent Impact Fee Funds	-	0.00%	$ -	66,107	-
Professional Services / Credits	40,000	100%	40,000	66,107	1
Professional Services /Credits Subtotal	**40,000**		**40,000**		**0.61**
Total Impact Fee Per Trip	**$ 28,917,629**		**$ 8,051,400**		**$ 121.79**

Maximum Legal Transportation Impact Fees per Trip

As shown in Figure 4.1, the maximum legal impact fee per trip is calculated to be $121.79. An impact fee is then calculated based on development type and the net adjusted trips that type of development generates. This fee is based upon the costs of future facilities and professional fees, but excludes future bond interest and buy-in cost related to existing facilities with capacity to serve growth. Each fee for individual components is based upon the historic and future costs divided by the total and available capacities. This results in a very precise impact fee per trip and complies with the Impact Fees Act.

Determination of Transportation Impact Fee

The impact fees to be paid by different types of development are assessed according to the number of trips generated. To calculate the total impact fee for a development, the impact fee per trip (as calculated above) is multiplied by the number of trips the development type generates. The impact fee to be assessed for Single Family or Multi-Family development is shown in Figure 4.2. All other development types will be assessed an impact fee according to trip generation as calculated by the City at the time of building permit issuance. City guidelines for generating trip rates for various other land use categories are provided in a memorandum prepared by Hales Engineering. This memorandum has been included as an appendix to this report.

FIGURE 4.2: MAXIMUM IMPACT FEE SCHEDULE

Transportation Impact Fees			
Development Type	Net Adjusted Trips	Cost per Trip	Impact Fee
Single Family Residential (per Dwelling Unit)	9.55	$ 121.79	$ 1,163
Multi-Family Residential (per Dwelling Unit)	5.81	121.79	708
All Other Development Types	Cost per trip of $121.79 multiplied by # of trips generated		

APPENDICES: CERTIFICATION, SERVICE AREA MAP, IMPACT FEE CALCULATIONS

In accordance with Utah Code Annotated, 11-36a-306(2), Zions Public Finance, Inc. (Zions), makes the following certification:

Zions certifies that the attached impact fee analysis:

1. includes only the cost of public facilities that are:
    a. allowed under the Impact Fees Act; and
    b. actually incurred; or
    c. projected to be incurred or encumbered within six years after the day on which each impact fee is paid;
2. does not include:
    a. costs of operation and maintenance of public facilities;
b. cost of qualifying public facilities that will raise the level of service for the facilities, through impact fees, above the level of service that is supported by existing residents;
c. an expense for overhead, unless the expense is calculated pursuant to a methodology that is consistent with generally accepted cost accounting practices and the methodological standards set forth by the federal Office of Management and Budget for federal grant reimbursement;
3. offset costs with grants or other alternate sources of payment; and
4. complies in each and every relevant respect with the Impact Fees Act.

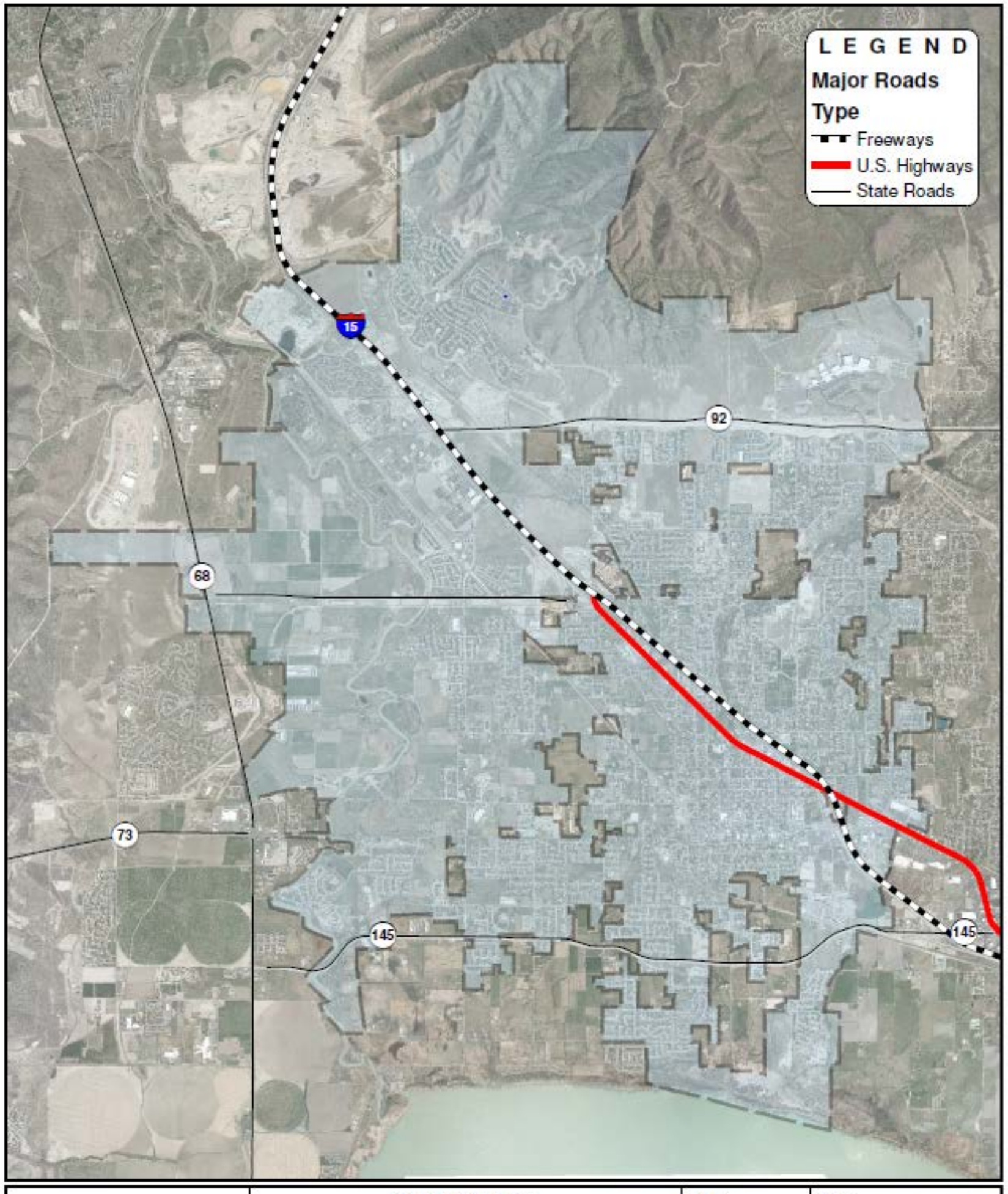
Zions Public Finance, Inc. makes this certification with the following caveats:

1. All of the recommendations for implementations of the Impact Fee Facilities Plan (IFFP) made in the IFFP or in the impact fee analysis are followed in their entirety by City staff and Council in accordance to the specific policies established for the Service Area.
2. If all or a portion of the IFFP or impact fee analysis are modified or amended, this certification is no longer valid.
3. All information provided to Zions Public Finance, Inc. its contractors or suppliers is assumed to be correct, complete and accurate. This includes information provided by Lehi City and outside sources. Copies of letters requesting data are included as appendices to the IFFP and the impact fee analysis.

Dated: 5/12/2016

ZIONS PUBLIC FINANCE, INC.

APPENDIX A: MAP OF IMPACT FEE SERVICE AREA



Bowen Collins & Associates, Inc.
CONSULTING ENGINEERS

IMPACT FEE
SERVICE AREA

LEHI CITY
LEHI IMPACT FEES

NORTH:

SCALE:
0 2,500 5,000
Feet

FIGURE NO.
X

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APPENDIX B: GROWTH IN DEMAND

Projected Traffic Demands - Population, Average Daily Trips

Year	Lehi Population	Annualized Growth Rate	Total Daily Trip Ends	Annualized Growth
2010	47,715			
2013	53,561	3.93%	240,476	
2023	68,285	2.46%	306,583	2%
Full Development	133,800	1.83%	547,058	1.58%

Source: 2015 Transportation Impact Fee Analysis Prepared by Bowen Collins & Associates

- Assumes Total Daily Trip Ends

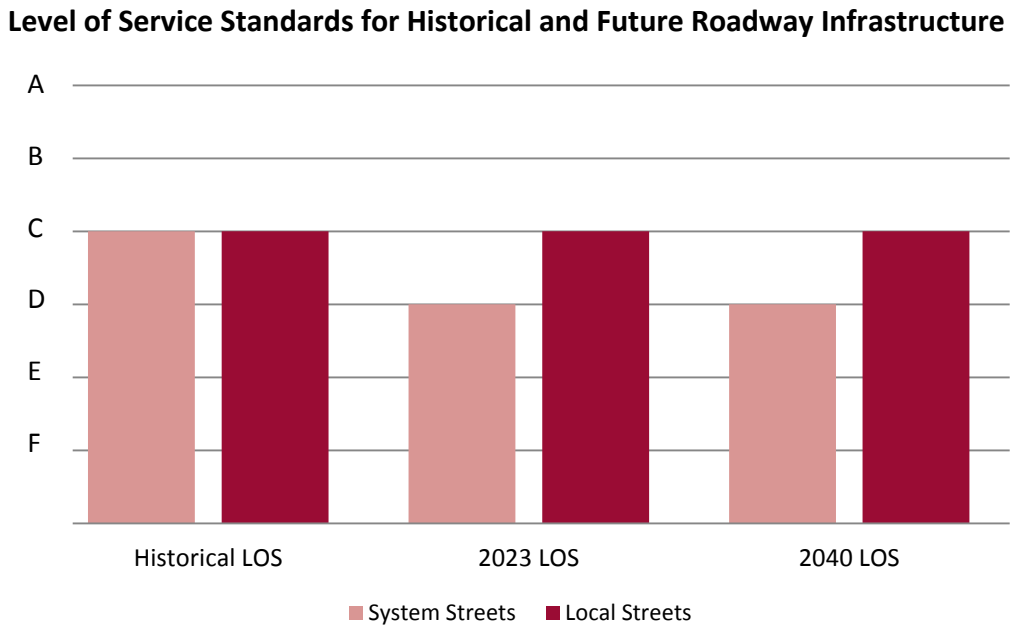
- 547,058 already takes into account the reduction for pass-by

APPENDIX C: LEVEL OF SERVICE

Level of Service Standards for Historical and Future Roadway Infrastructure

Roadway Infrastructure Category	Historical LOS/ City Code	2023 LOS	Full Development LOS
Arterial Streets	C	D	D
Major Collector	C	C	C
Mnor Collector	C	C	C
Local Streets	C	C	C

Source: 2014 Transportation Impact Fee Analysis Prepared by Bowen Collins & Associates



APPENDIX D: COST PER TRIP CALCULATION

Summary of the Amount of SF in each Roadway Infrastructure Category

Existing Roadway Infrastructure Category	Existing Centerline Feet	Cost per Linear Foot (2013)	Estimated Cost per SF in 1993	Total System Improvement Value (1993)
Arterials	630	$ 735	$ 407	$ 256,357
Major Collectors	28,630	349	193	5,533,130
Minor Collectors	313,823	167	92	28,996,432
Local Roads (Project)	N/A	135	75	-
Total Estimated 1993 System Improvement Cost				**$ 34,785,919**

Summary of Roadway Infrastructure Costs Deflated to Reflect Historical Investment

Existing Roadway Infrastructure Category	Total System Improvement Value (1993)	Base Local Improvement Costs	Estimated System Improvements Investment (Deflated)
Arterials	$ 256,357	$ 47,113	$ 209,244
Major Collectors	5,533,130	2,141,698	3,391,432
Minor Collectors	28,996,432	23,476,198	5,520,234
Total			**$ 9,120,910**

** The 2013 cost per square foot of roadway infrastructure was deflated to 1993 dollars in order to conservatively estimate the city's historic investment; the BLS CPI Inflation Calculator was utilized for this calculation*

Summary of Existing Capacity of Roadway Infrastructure for which Ten Year Growth is Responsible

Existing Roadway Infrastructure Category	Estimated System Improvements Investment (Deflated)	% Excess Capacity in LOS	% of Excess Capcity Utilized by 10 Year Growth	Cost to Ten Year Growth
Arterials	209,244	53%	0.00%	$ -
Major Collectors	3,391,432	53%	0.00%	-
Minor Collectors	5,520,234	53%	0.00%	-
Total	**9,120,910**			**$ -**

Source: Lehi City Public Works Department, Zions Public Finance

APPENDIX E: EXISTING ROAD LENGTHS

Street Categories	Length (Ft)
Arterial	630
Local	822,876
Major Collector	28,630
Minor Collector	313,823
Total Length (Ft)	1,165,958

- Excludes State Roads and Highways

Street Categories	ROW Width	Pavement Width
102' Arterial	102	80
80' Major Collector	80	58
66' Minor Collector	66	44
Local	56	34

APPENDIX F: FUTURE TRANSPORTATION PROJECTS TO 2040 FROM IFFP

Capital Project Overview

2014 0.00%

Project Name	Location	% to Existing	% to 10 Year Growth	% to 10-Year Growth in Passthrough	% to Growth Beyond 10 Years	Year to be Constructed	2014 Cost	Construction Costs	Cost to Existing	Cost to 10 Year Growth	Cost to 10-Year Growth in Passthrough	Cost to Growth Beyond 10 Years
98' Major Arterial	Triumph Blvd	0.0%	32.2%	0.6%	67.1%	2015	2,256,600	2,256,600	-	727,017	14,458	1,515,125
98' Major Arterial	Triumph Blvd	0.0%	31.0%	0.6%	68.3%	2015	1,340,214	1,340,214	-	416,073	8,588	915,555
80' Minor Collector - Cycle Track	700 South	0.0%	74.7%	0.3%	25.0%	2019	172,786	172,786	-	129,127	462	43,197
80' Minor Collector - Cycle Track	700 South	0.0%	74.7%	0.3%	25.0%	2019	125,755	125,755	-	93,980	336	31,439
102' Major Arterial - Buffered Bike Lane	3600 West	7.9%	45.4%	3.4%	43.3%	2016	3,241,228	3,241,228	254,556	1,472,070	110,964	1,403,638
80' Major Collector - Buffered Bike Lane	2600 North	9.3%	90.7%	0.0%	0.0%	2016	1,504,543	1,504,543	140,504	1,364,018	21	-
80' Major Collector - Buffered Bike Lane	1500 North	6.5%	58.9%	9.5%	25.1%	2016	1,011,931	1,011,931	65,689	595,544	96,243	254,455
80' Major Arterial	1200 West	22.7%	30.9%	1.2%	45.2%	2017	205,579	205,579	46,649	63,457	2,485	92,988
80' Major Arterial	1200 West	17.2%	29.0%	1.1%	52.7%	2017	118,431	118,431	20,427	34,325	1,313	62,366
80' Major Arterial	1200 West	17.2%	29.0%	1.1%	52.7%	2017	126,625	126,625	21,840	36,700	1,403	66,681
80' Major Collector - Buffered Bike Lane	3200 North	0.0%	58.3%	0.0%	41.7%	2018	961,483	961,483	-	560,827	38	400,618
TM Typical Minor Arterial	Traverse Mtn Blvd	0.0%	17.8%	0.0%	82.2%	2017	671,985	671,985	-	119,844	-	552,141
Commuter Lane Off Ramp	Center St	0.0%	29.7%	0.0%	70.3%	2019	1,100,000	1,100,000	-	326,698	2	773,300
Accel/Deccel Lanes onto SR 92	Center St	0.0%	29.7%	0.0%	70.3%	2019	100,800	100,800	-	29,937	-	70,862
Misc. Traffic Signals	Traffic Signals	10.5%	34.7%	1.4%	53.4%	2015-2019	1,000,000	1,000,000	105,379	346,750	14,140	533,730
Misc. Road Widening	Road Widening	0.0%	16.5%	0.7%	82.8%	2015-2024	1,250,000	1,250,000	-	206,171	8,880	1,034,949
80' Major Arterial	2300 West	11.6%	23.0%	1.8%	63.6%	2021	302,052	302,052	34,969	69,480	5,388	192,215
80' Major Arterial	2300 West	11.0%	23.7%	1.6%	63.6%	2021	295,557	295,557	32,617	70,076	4,783	188,082
80' Minor Collector - Cycle Track	700 South	0.0%	47.2%	27.8%	25.0%	2021	150,336	150,336	-	70,974	41,778	37,584
66' Minor Collector	4600 West	0.0%	39.8%	0.0%	60.2%	2020	168,014	168,014	-	66,869	1	101,144
66' Minor Collector	4800 West	0.0%	39.8%	0.0%	60.2%	2020	187,426	187,426	-	74,595	-	112,830
80' Major Arterial	N Frontage Rd	5.3%	49.0%	0.0%	45.7%	2020	1,223,504	1,223,504	64,591	599,699	35	559,178
Traverse Mountain Flight Park Road	Flight Park Rd	0.0%	17.8%	0.0%	82.2%	2024	1,350,196	1,350,196	-	240,799	-	1,109,397
Traverse Mountain Frontage Road	N Frontage Rd	7.4%	33.2%	0.4%	58.9%	2023	891,674	891,674	66,268	296,370	3,777	525,258
							$ 19,756,719	**$ 19,756,719**	**$ 853,490**	**$ 8,011,400**	**$ 315,097**	**$ 10,576,732**
Ten Year Total							**$ 19,756,719**	**$ 19,756,719**	**$ 853,490**	**$ 8,011,400**	**$ 315,097**	**$ 10,576,732**

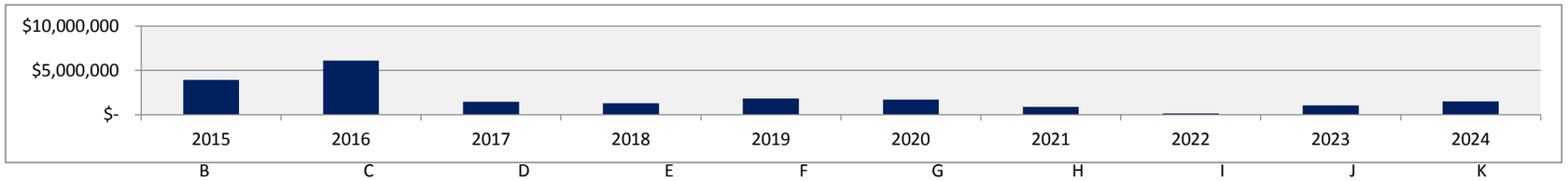
Total Capital Projects by Year

Project	Location	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Totals
98' Major Arterial	Triumph Blvd	2,256,600	-	-	-	-	-	-	-	-	-	2,256,600
98' Major Arterial	Triumph Blvd	1,340,214	-	-	-	-	-	-	-	-	-	1,340,214
80' Minor Collector - Cycle Track	700 South	-	-	-	-	172,786	-	-	-	-	-	172,786
80' Minor Collector - Cycle Track	700 South	-	-	-	-	125,755	-	-	-	-	-	125,755
102' Major Arterial - Buffered Bike Lane	3600 West	-	3,241,228	-	-	-	-	-	-	-	-	3,241,228
80' Major Collector - Buffered Bike Lane	2600 North	-	1,504,543	-	-	-	-	-	-	-	-	1,504,543
80' Major Collector - Buffered Bike Lane	1500 North	-	1,011,931	-	-	-	-	-	-	-	-	1,011,931
80' Major Arterial	1200 West	-	-	205,579	-	-	-	-	-	-	-	205,579
80' Major Arterial	1200 West	-	-	118,431	-	-	-	-	-	-	-	118,431
80' Major Arterial	1200 West	-	-	126,625	-	-	-	-	-	-	-	126,625
80' Major Collector - Buffered Bike Lane	3200 North	-	-	-	961,483	-	-	-	-	-	-	961,483
TM Typical Minor Arterial	Traverse Mtn Blvc	-	-	671,985	-	-	-	-	-	-	-	671,985
Commuter Lane Off Ramp	Center St	-	-	-	-	1,100,000	-	-	-	-	-	1,100,000
Accel/Deccel Lanes onto SR 92	Center St	-	-	-	-	100,800	-	-	-	-	-	100,800
Misc. Traffic Signals	Traffic Signals	200,000	200,000	200,000	200,000	200,000	-	-	-	-	-	1,000,000
Misc. Road Widening	Road Widening	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000	1,250,000
80' Major Arterial	2300 West	-	-	-	-	-	-	302,052	-	-	-	302,052
80' Major Arterial	2300 West	-	-	-	-	-	-	295,557	-	-	-	295,557
80' Minor Collector - Cycle Track	700 South	-	-	-	-	-	-	150,336	-	-	-	150,336
66' Minor Collector	4600 West	-	-	-	-	-	168,014	-	-	-	-	168,014
66' Minor Collector	4800 West	-	-	-	-	-	187,426	-	-	-	-	187,426
80' Major Arterial	N Frontage Rd	-	-	-	-	-	1,223,504	-	-	-	-	1,223,504
Traverse Mountain Flight Park Road	Flight Park Rd	-	-	-	-	-	-	-	-	-	1,350,196	1,350,196
Traverse Mountain Frontage Road	N Frontage Rd	-	-	-	-	-	-	-	-	891,674	-	891,674
Total Capital Projects		**$ -**	**$ 3,921,814**	**$ 6,082,702**	**$ 1,447,620**	**$ 1,286,483**	**$ 1,824,341**	**$ 1,703,944**	**$ 872,945**	**$ 125,000**	**$ 1,016,674**	**$ 1,475,196**	**$ 19,756,719**
Funded with Certificates												
Bond Funded Capital Projects		**$ -**	**$ 3,921,814**	**$ 6,082,702**	**$ 1,447,620**	**$ 1,286,483**	**$ 1,824,341**	**$ 1,703,944**	**$ 872,945**	**$ 125,000**	**$ 1,016,674**	**$ 1,475,196**	**$ 19,756,719**

Bond Issue #1 2016	**$**	**6,000,000**
Bond Issue #2 2019	**$**	**4,830,000**
50% Bond Financing of City Road Project	**$**	**10,830,000**

$ 9,878,360

54.817%



Existing / Project Level

Project	Location	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Totals
98' Major Arterial	Triumph Blvd	-	-	-	-	-	-	-	-	-	-	-
98' Major Arterial	Triumph Blvd	-	-	-	-	-	-	-	-	-	-	-
80' Minor Collector - Cycle Track	700 South	-	-	-	-	-	-	-	-	-	-	-
80' Minor Collector - Cycle Track	700 South	-	-	-	-	-	-	-	-	-	-	-
102' Major Arterial - Buffered Bike Lane	3600 West	-	254,556	-	-	-	-	-	-	-	-	254,556
80' Major Collector - Buffered Bike Lane	2600 North	-	140,504	-	-	-	-	-	-	-	-	140,504
80' Major Collector - Buffered Bike Lane	1500 North	-	65,689	-	-	-	-	-	-	-	-	65,689
80' Major Arterial	1200 West	-	-	46,649	-	-	-	-	-	-	-	46,649
80' Major Arterial	1200 West	-	-	20,427	-	-	-	-	-	-	-	20,427
80' Major Arterial	1200 West	-	-	21,840	-	-	-	-	-	-	-	21,840
80' Major Collector - Buffered Bike Lane	3200 North	-	-	-	-	-	-	-	-	-	-	-
TM Typical Minor Arterial	Traverse Mtn Blvc	-	-	-	-	-	-	-	-	-	-	-
Commuter Lane Off Ramp	Center St	-	-	-	-	-	-	-	-	-	-	-
Accel/Deccel Lanes onto SR 92	Center St	-	-	-	-	-	-	-	-	-	-	-
Misc. Traffic Signals	Traffic Signals	21,076	21,076	21,076	21,076	21,076	-	-	-	-	-	105,379
Misc. Road Widening	Road Widening	-	-	-	-	-	-	-	-	-	-	-
80' Major Arterial	2300 West	-	-	-	-	-	-	34,969	-	-	-	34,969
80' Major Arterial	2300 West	-	-	-	-	-	-	32,617	-	-	-	32,617
80' Minor Collector - Cycle Track	700 South	-	-	-	-	-	-	-	-	-	-	-
66' Minor Collector	4600 West	-	-	-	-	-	-	-	-	-	-	-
66' Minor Collector	4800 West	-	-	-	-	-	-	-	-	-	-	-
80' Major Arterial	N Frontage Rd	-	-	-	-	-	64,591	-	-	-	-	64,591
Traverse Mountain Flight Park Road	Flight Park Rd	-	-	-	-	-	-	-	-	-	-	-
Traverse Mountain Frontage Road	N Frontage Rd	-	-	-	-	-	-	-	-	66,268	-	66,268
		$ 21,076	**$ 481,825**	**$ 109,992**	**$ 21,076**	**$ 21,076**	**$ 64,591**	**$ 67,586**	**$ -**	**$ 66,268**	**$ -**	**$ 853,490**

10 Year Growth

Project	Location	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Totals
98' Major Arterial	Triumph Blvd	727,017	-	-	-	-	-	-	-	-	-	727,017
98' Major Arterial	Triumph Blvd	416,073	-	-	-	-	-	-	-	-	-	416,073
80' Minor Collector - Cycle Track	700 South	-	-	-	-	129,127	-	-	-	-	-	129,127
80' Minor Collector - Cycle Track	700 South	-	-	-	-	93,980	-	-	-	-	-	93,980
102' Major Arterial - Buffered Bike Lane	3600 West	-	1,472,070	-	-	-	-	-	-	-	-	1,472,070
80' Major Collector - Buffered Bike Lane	2600 North	-	1,364,018	-	-	-	-	-	-	-	-	1,364,018
80' Major Collector - Buffered Bike Lane	1500 North	-	595,544	-	-	-	-	-	-	-	-	595,544
80' Major Arterial	1200 West	-	-	63,457	-	-	-	-	-	-	-	63,457
80' Major Arterial	1200 West	-	-	34,325	-	-	-	-	-	-	-	34,325
80' Major Arterial	1200 West	-	-	36,700	-	-	-	-	-	-	-	36,700
80' Major Collector - Buffered Bike Lane	3200 North	-	-	-	560,827	-	-	-	-	-	-	560,827
TM Typical Minor Arterial	Traverse Mtn Blvc	-	-	119,844	-	-	-	-	-	-	-	119,844
Commuter Lane Off Ramp	Center St	-	-	-	-	326,698	-	-	-	-	-	326,698
Accel/Deccel Lanes onto SR 92	Center St	-	-	-	-	29,937	-	-	-	-	-	29,937
Misc. Traffic Signals	Traffic Signals	69,350	69,350	69,350	69,350	69,350	-	-	-	-	-	346,750
Misc. Road Widening	Road Widening	20,617	20,617	20,617	20,617	20,617	20,617	20,617	20,617	20,617	20,617	206,171
80' Major Arterial	2300 West	-	-	-	-	-	-	69,480	-	-	-	69,480
80' Major Arterial	2300 West	-	-	-	-	-	-	70,076	-	-	-	70,076
80' Minor Collector - Cycle Track	700 South	-	-	-	-	-	-	70,974	-	-	-	70,974
66' Minor Collector	4600 West	-	-	-	-	-	66,869	-	-	-	-	66,869
66' Minor Collector	4800 West	-	-	-	-	-	74,595	-	-	-	-	74,595
80' Major Arterial	N Frontage Rd	-	-	-	-	-	599,699	-	-	-	-	599,699
Traverse Mountain Flight Park Road	Flight Park Rd	-	-	-	-	-	-	-	-	-	240,799	240,799
Traverse Mountain Frontage Road	N Frontage Rd	-	-	-	-	-	-	-	-	296,370	-	296,370
		$ 1,233,057	**$ 3,521,599**	**$ 344,294**	**$ 650,794**	**$ 669,709**	**$ 761,780**	**$ 231,147**	**$ 20,617**	**$ 316,987**	**$ 261,416**	**$ 8,011,400**

Beyond 10 Year Growth

Project	Location	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Totals
98' Major Arterial	Triumph Blvd	14,458	-	-	-	-	-	-	-	-	-	14,458
98' Major Arterial	Triumph Blvd	8,588	-	-	-	-	-	-	-	-	-	8,588
80' Minor Collector - Cycle Track	700 South	-	-	-	-	462	-	-	-	-	-	462
80' Minor Collector - Cycle Track	700 South	-	-	-	-	336	-	-	-	-	-	336
102' Major Arterial - Buffered Bike Lane	3600 West	-	110,964	-	-	-	-	-	-	-	-	110,964
80' Major Collector - Buffered Bike Lane	2600 North	-	21	-	-	-	-	-	-	-	-	21
80' Major Collector - Buffered Bike Lane	1500 North	-	96,243	-	-	-	-	-	-	-	-	96,243
80' Major Arterial	1200 West	-	-	2,485	-	-	-	-	-	-	-	2,485
80' Major Arterial	1200 West	-	-	1,313	-	-	-	-	-	-	-	1,313
80' Major Arterial	1200 West	-	-	1,403	-	-	-	-	-	-	-	1,403
80' Major Collector - Buffered Bike Lane	3200 North	-	-	-	38	-	-	-	-	-	-	38
TM Typical Minor Arterial	Traverse Mtn Blvc	-	-	-	-	-	-	-	-	-	-	-
Commuter Lane Off Ramp	Center St	-	-	-	-	2	-	-	-	-	-	2
Accel/Deccel Lanes onto SR 92	Center St	-	-	-	-	-	-	-	-	-	-	-
Misc. Traffic Signals	Traffic Signals	2,828	2,828	2,828	2,828	2,828	-	-	-	-	-	14,140
Misc. Road Widening	Road Widening	888	888	888	888	888	888	888	888	888	888	8,880
80' Major Arterial	2300 West	-	-	-	-	-	-	5,388	-	-	-	5,388
80' Major Arterial	2300 West	-	-	-	-	-	-	4,783	-	-	-	4,783
80' Minor Collector - Cycle Track	700 South	-	-	-	-	-	-	41,778	-	-	-	41,778
66' Minor Collector	4600 West	-	-	-	-	-	1	-	-	-	-	1
66' Minor Collector	4800 West	-	-	-	-	-	-	-	-	-	-	-
80' Major Arterial	N Frontage Rd	-	-	-	-	-	35	-	-	-	-	35
Traverse Mountain Flight Park Road	Flight Park Rd	-	-	-	-	-	-	-	-	-	-	-
Traverse Mountain Frontage Road	N Frontage Rd	-	-	-	-	-	-	-	-	3,777	-	3,777
		$ 26,762	$ 210,944	$ 8,917	$ 3,754	$ 4,517	$ 924	$ 52,837	$ 888	$ 4,665	$ 888	$ 315,097

Non-Qualifying / 10 Year Pass Through

Project	Location	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Totals
98' Major Arterial	Triumph Blvd	1,515,125	-	-	-	-	-	-	-	-	-	1,515,125
98' Major Arterial	Triumph Blvd	915,555	-	-	-	-	-	-	-	-	-	915,555
80' Minor Collector - Cycle Track	700 South	-	-	-	-	43,197	-	-	-	-	-	43,197
80' Minor Collector - Cycle Track	700 South	-	-	-	-	31,439	-	-	-	-	-	31,439
102' Major Arterial - Buffered Bike Lane	3600 West	-	1,403,638	-	-	-	-	-	-	-	-	1,403,638
80' Major Collector - Buffered Bike Lane	2600 North	-	-	-	-	-	-	-	-	-	-	-
80' Major Collector - Buffered Bike Lane	1500 North	-	254,455	-	-	-	-	-	-	-	-	254,455
80' Major Arterial	1200 West	-	-	92,988	-	-	-	-	-	-	-	92,988
80' Major Arterial	1200 West	-	-	62,366	-	-	-	-	-	-	-	62,366
80' Major Arterial	1200 West	-	-	66,681	-	-	-	-	-	-	-	66,681
80' Major Collector - Buffered Bike Lane	3200 North	-	-	-	400,618	-	-	-	-	-	-	400,618
TM Typical Minor Arterial	Traverse Mtn Blvc	-	-	552,141	-	-	-	-	-	-	-	552,141
Commuter Lane Off Ramp	Center St	-	-	-	-	773,300	-	-	-	-	-	773,300
Accel/Deccel Lanes onto SR 92	Center St	-	-	-	-	70,862	-	-	-	-	-	70,862
Misc. Traffic Signals	Traffic Signals	106,746	106,746	106,746	106,746	106,746	-	-	-	-	-	533,730
Misc. Road Widening	Road Widening	103,495	103,495	103,495	103,495	103,495	103,495	103,495	103,495	103,495	103,495	1,034,949
80' Major Arterial	2300 West	-	-	-	-	-	-	192,215	-	-	-	192,215
80' Major Arterial	2300 West	-	-	-	-	-	-	188,082	-	-	-	188,082
80' Minor Collector - Cycle Track	700 South	-	-	-	-	-	-	37,584	-	-	-	37,584
66' Minor Collector	4600 West	-	-	-	-	-	101,144	-	-	-	-	101,144
66' Minor Collector	4800 West	-	-	-	-	-	112,830	-	-	-	-	112,830
80' Major Arterial	N Frontage Rd	-	-	-	-	-	559,178	-	-	-	-	559,178
Traverse Mountain Flight Park Road	Flight Park Rd	-	-	-	-	-	-	-	-	-	1,109,397	1,109,397
Traverse Mountain Frontage Road	N Frontage Rd	-	-	-	-	-	-	-	-	525,258	-	525,258
		$ 2,640,921	**$ 1,868,334**	**$ 984,417**	**$ 610,859**	**$ 1,129,038**	**$ 876,647**	**$ 521,376**	**$ 103,495**	**$ 628,753**	**$ 1,212,892**	**$ 10,576,732**

APPENDIX G: EXISTING AND FUTURE BONDS

Summary of Future Bond #1

Inputs	
Proceeds	$6,000,000
Annual Interest Rate	4.00%
Cost of Issuance	4.00%
Number of Years	20
Par Amount	**$6,240,000**

Summary of Future Bond #2

Inputs	
Proceeds	$4,830,000
Annual Interest Rate	4.00%
Cost of Issuance	4.00%
Number of Years	20
Par Amount	**$5,024,000**

Future Bond #1

PmtNo.	Principal	Interest	Total Principal and Interest
1	215,000	214,375	$ 429,375
2	225,000	206,850	431,850
3	230,000	198,975	428,975
4	240,000	190,925	430,925
5	250,000	182,525	432,525
6	255,000	173,775	428,775
7	265,000	164,850	429,850
8	275,000	155,575	430,575
9	285,000	145,950	430,950
10	295,000	135,975	430,975
11	305,000	125,650	430,650
12	315,000	114,975	429,975
13	330,000	103,950	433,950
14	340,000	92,400	432,400
15	350,000	80,500	430,500
16	365,000	68,250	433,250
17	375,000	55,475	430,475
18	390,000	42,350	432,350
19	405,000	28,700	433,700
20	415,000	14,525	429,525
	6,125,000	2,496,550	8,621,550

Source: Zions Bank Public Finance

Future Bond #2

PmtNo.	Principal	Interest	Total Principal and Interest
1	175,000	172,550	$ 347,550
2	180,000	166,425	346,425
3	185,000	160,125	345,125
4	195,000	153,650	348,650
5	200,000	146,825	346,825
6	205,000	139,825	344,825
7	215,000	132,650	347,650
8	220,000	125,125	345,125
9	230,000	117,425	347,425
10	240,000	109,375	349,375
11	245,000	100,975	345,975
12	255,000	92,400	347,400
13	265,000	83,475	348,475
14	275,000	74,200	349,200
15	280,000	64,575	344,575
16	290,000	54,775	344,775
17	300,000	44,625	344,625
18	315,000	34,125	349,125
19	325,000	23,100	348,100
20	335,000	11,725	346,725
	4,930,000	2,007,950	6,937,950

Source: Zions Bank Public Finance

APPENDIX H: COST PER TRIP CALCULATION

Summary of Existing Capacity of Roadway Infrastructure for which Ten Year Growth is Responsible

Component	Total Cost	% That will Serve Ten Year Demand	Dollar Amount that will Serve Ten Year Demand	Ten Year Demand (Trips)	Cost per Trip
Roadway Impact Fee					
Future 10 Year Capital Projects	$ 19,756,719	40.55%	$ 8,011,400	66,107	$ 121
Future Growth Related Debt to be Issued - Interest Only	-	0.00%	-	66,107	-
Existing Infrastructure	9,120,910	0.00%	-	66,107	-
Existing Roads Related Debt - INTEREST ONLY	-	0.00%	-	66,107	-
Roadway Impact Fee Subtotal	**$ 28,877,629**		**$ 8,011,400**		**$ 121.19**
Professional Services/ Credits					
Unspent Impact Fee Funds	-	0.00%	$ -	66,107	-
Professional Services / Credits	40,000	100%	40,000	66,107	1
Professional Services /Credits Subtotal	**40,000**		**40,000**		**0.61**
Total Impact Fee Per Trip	**$ 28,917,629**		**$ 8,051,400**		**$ 121.79**

APPENDIX I: RECOMMENDED IMPACT FEES

Non Standard Demand Adjustment

Steps in Calculating a Non-Standard Fee
Step 1: Determine the expected Average Daily Trips (ADT) for the development
Step 2: Determine the percentage of ADT that are primary trips (1- % pass-by traffic)
Step 3: Multiple ADT by the Percent Primary Trips by $121.79

Transportation Impact Fees by Land Use Type

Transportation Impact Fees			
Development Type	Net Adjusted Trips	Cost per Trip	Impact Fee
Single Family Residential (per Dwelling Unit)	9.55	$ 121.79	$ 1,163
Multi-Family Residential (per Dwelling Unit)	5.81	121.79	708
All Other Development Types	Cost per trip of $121.79 multiplied by # of trips generated		

MEMORANDUM

Date: March 17, 2016

To: Bowen Collins & Associates

From: Ryan Hales, P.E., PTOE, AICP – Hales Engineering
Lorin Powell, P.E.

Subject: Lehi City Impact Fee Application

UT11-266

This memorandum outlines the methodology of applying impact fees for the City of Lehi generated by Bowen Collins & Associates, and Zions Bank Public Finance as part of their impact fee facilities plan (IFFP) and their impact fee analysis (IFA). They derived fees for Lehi based on average daily trips (ADT) generation and calculated impact fees for single family residential development. The purpose of this memorandum is to develop a methodology for calculating appropriate trip generation rates for development types other than residential that are equitably based for other uses and their associated impacts.

The following paragraphs describe the methodology and Table 1 demonstrates the application of this methodology that was developed through a collaborative effort between Lehi City Engineering Department and Hales Engineering, based on the identification of local trips, use of local street, and if the trip was a non-pass by trip.

The general approach used in this memorandum is to start with ITE trips and then adjust them based on factors that will affect use of City streets. Table 1 was developed using land uses and their associated trip generation for 21 different categories as identified in the Institute of Transportation Engineers (ITE), *Trip Generation, 9th Edition (2012)*. Although there are many other categories within *Trip Generation*, the 21 land uses selected for Table 1 represent historically common development within Lehi City municipal boundaries, as identified by the City Engineer.

In order to form Table 1, each of the 21 potential land uses were listed along with their appropriate ITE *Trip Generation* designation (column a), their unit of measure (e.g., per 1,000 square feet, column b), and their ITE trip rate per unit of measure (column c).

The columns following the basic ITE information is where reductions begin for each land use, primarily the percentages of each qualifier, including non-local trips (column d), use of local streets (column e), and non-pass-by trips (column f) to derive a multiplying factor (column g) to

reduce the daily trip count by land use category. See the adjusted trip rates in (column h) for impact fee application.

Non-local Trips
This is the first factor quantified after the land use category and has been created to identify what percentage of the trips this land use will have with an origin outside of the local municipal boundaries and a destination within the municipal boundaries for equitable application of impact fees. As an example, with all of the new office buildings at Thanksgiving Park, they are regionally attractive from an accessibility/convenience point of view and likely draw traffic (e.g., workers) from both Utah and Salt Lake County with comparatively few workers who reside in Lehi. Our assumption was that 50% of the workers reside in Lehi, thus producing a lower factor and subsequently lowering the impact fee for this type of land use. All 21 potential land use were reviewed and non-local trips identified based on historical perspective, and engineering experience.

Use of Local Streets
Although Lehi has many local streets within the municipal boundaries, a number of the larger roads belong to UDOT and the majority of them are classified as arterials or major collectors. These UDOT roads typically have high demand and a large amount of capacity and are therefore the roads along which business and other high density residential, dining and entertainment land uses congregate. As such, the local roads do not collect all of the traffic to disperse them to the UDOT facilities, rather a reverse situation occurs. An example would be traffic headed to the new office buildings in Thanksgiving Park, where much of the traffic arrives using I-15 and stays primarily on the State system, however, many of the office buildings are only accessible from the local road system, therefore a balance is needed, and this becomes the second factor. Again, we have identified a lower rate for each land use based on engineering experience, producing a lower factor and subsequently lowering the impact fees to a more equitable position.

Non-pass-by Trips
The Institute of Transportation Engineers has completed numerous studies to identify the trip making characteristics for vehicles entering specific land use types over the years and have compiled this information into their publication, *Trip Generation*. The term used for vehicles entering a site as they travel along a roadway, where the site was not the primary destination, but a stop for convenience, is termed a pass-by trip. An example of a pass-by trip would be when someone heads to a home improvement store as their primary destination, but on their way realize they are almost out of fuel and they stop to fill up the gas tank.

We have used the inverse of the ITE pass-by trips to evaluate the non-pass-by trips to the various land uses (21) identified in Table 1. This factor allows us to lower the impact fee based on whether the trips are for a primary destination type of land use to create a more equitable

calculation of fees. The ITE, Trip Generation, manual and engineering experience were used to generate this multiplier.

Each of these adjustments are multiplied together to create a scaling factor to keep the trip ends projected by ITE, or to adjust them thereby lowering the proposed impact fees to a more equitable application. Out of the 21 land uses studied within this memo, only one did not reduce, but remained consistent with the ITE projections (residential).

If you have any questions regarding this memo, please feel free to contact us.

Table 1 - Impact Fee
Roads (Methods of Assessing)
March 26, 2015

(a) Land Use	(b) Units	(c) ITE Trips	(d) Non Local Trips	(e) Use of Local Streets	(f) Non Passby	(g) Factor	(h) Proposed Trip Rate For IF
Residential	House	9.55	100%	100%	100%	1.000	9.55
General Office (710)	1000 SF	11.92	50%	50%	100%	0.250	2.98
Hotel (310)	Rooms	5.22	100%	50%	100%	0.500	2.61
Industry (120)	1000 SF	1.50	80%	50%	100%	0.400	0.60
Light Industry (110)	1000 SF	5.44	80%	50%	100%	0.400	2.18
Specialty Retail (826)	1000 SF	44.35	50%	50%	65%	0.163	7.21
Supermarket (850)	1000 SF	102.27	50%	50%	50%	0.125	12.78
Superstore (862)	1000 SF	30.77	50%	50%	50%	0.125	3.85
Warehousing (150)	1000 SF	3.60	90%	50%	100%	0.450	1.62
Medical/Dental Bldg (720)	1000 SF	30.20	50%	50%	100%	0.250	7.55
Drive-in Bank (912)	1000 SF	148.33	50%	50%	60%	0.150	22.25
Drugstore w/Drive (881)	1000 SF	97.00	50%	50%	50%	0.125	12.13
Auto Parts (843)	1000 SF	66.00	50%	50%	70%	0.175	11.55
Tire Store (848)	1000 SF	24.83	50%	50%	100%	0.250	6.21
Gas Station w/Conv.(945)	Fuel Positions	162.83	50%	50%	40%	0.100	16.28
High Turnover Rest.(932)	1000 SF	127.33	50%	50%	50%	0.125	15.92
Fast Food w/Drive (934)	1000 SF	496.50	50%	50%	50%	0.125	62.06
Church (560)	1000 SF	36.60	5%	95%	100%	0.048	1.74
Elementary School (520)	1000 SF	15.47	10%	90%	100%	0.090	1.39
Middle School (522)	1000 SF	13.80	15%	85%	100%	0.128	1.76
High School (530)	1000 SF	12.92	20%	80%	100%	0.160	2.07

Notes:
50% Entering & Exiting
(#) is numbers from the Institute of Transportation Engineers Trip Generation Manuals