March 21, 2025

City of Lee's Summit
Development Services
220 SE Green Street
Lee's Summit, MO 64063

RE: Union Tavern at New Longview
Storm Drainage Letter
Olsson Project Number: A24-06991

To Whom It May Concern:

This letter is intended to serve as a stormwater study for the above referenced phase of New Longview. Please refer to the "New Longview Phase 2, Preliminary Stormwater Drainage Study", dated September 2, 2016 (attached), for additional information.

Union Tavern at New Longview is a 12,047 square-foot building which sits on Lot 1D and Tract A of the Final Plat of Fascination at New Longview. The site is located on the SE corner of the Longview Boulevard and Fascination Drive intersection, which locates the project in the NW ¼ of Section 10, Township 47 N, Range 32 W, Lee's Summit, Jackson County, Missouri.

Stormwater runoff from the site will be collected by grate inlets, roof drains, and curb and gutter and directed to the existing storm sewer system within the parking lot between Union Tavern at New Longview and the existing B&B Theater to Basin B as shown in Exhibit 02 and directed to Basin B as shown in Exhibit 01.

The proposed site curve number and drainage areas for flow to the south and east are consistent with assumptions made in the Preliminary Stormwater Drainage Study and comply with the City of Lee's Summit requirements. With the above discussion and the following attachments, we are requesting approval of this storm drainage letter and proposed building project.

Sincerely,

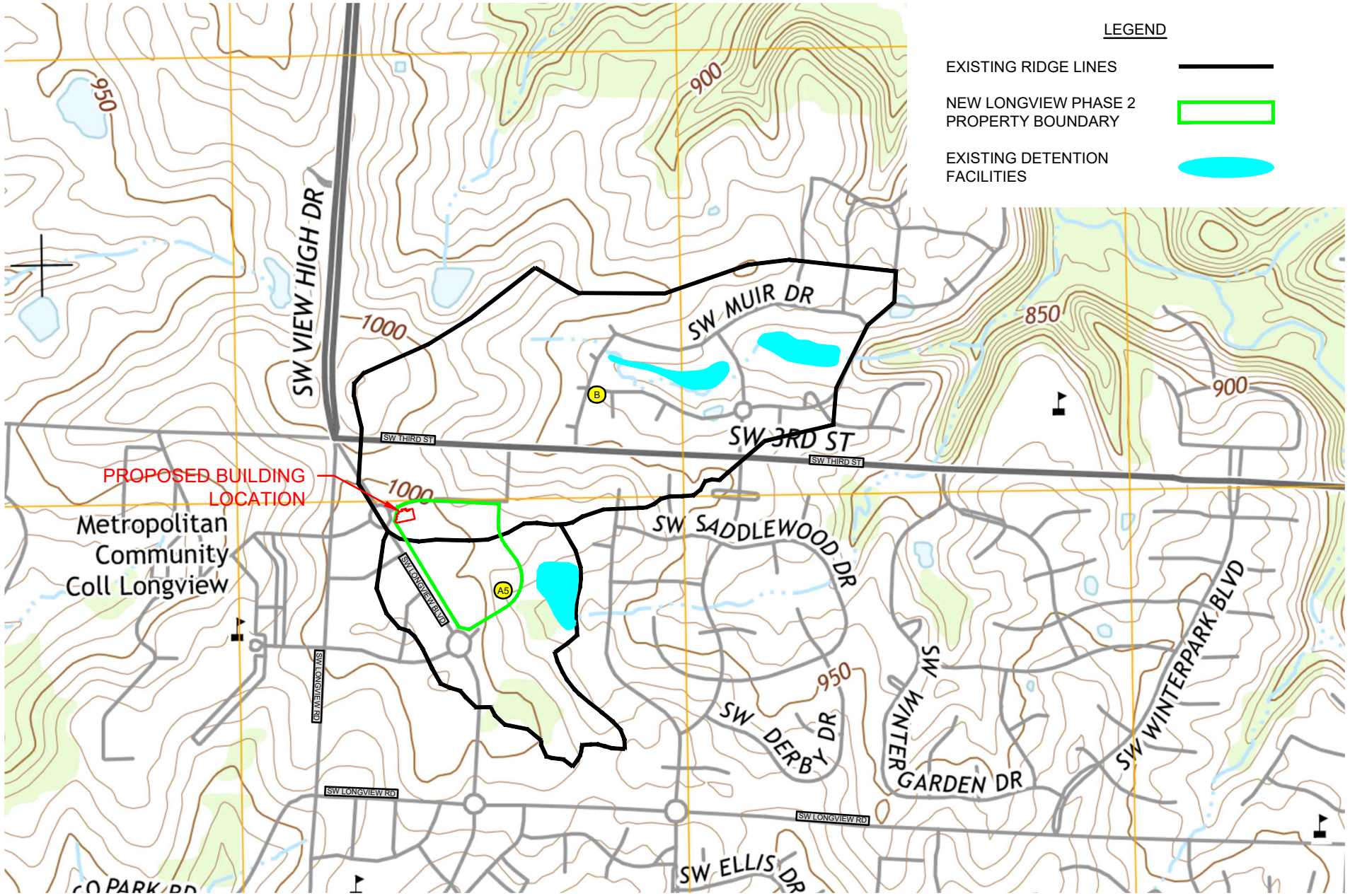
STATE OF MISSOURI
STEPHEN M. SAYLOR
NUMBER PE-2018021248
3/21/2025
PROFESSIONAL ENGINEER

Stephen Saylor, PE
Olsson Project Engineer

1301 Burlington / Suite 100 / North Kansas City, MO 46116
O 816.361.1177 / **olsson.com**

EXHIBIT 01

NEW LONGVIEW PHASE 2 DRAINAGE AREA MAP



PROJECT NO:	A24-06991
DRAWN BY:	SMS
DATE:	03.21.2025

NEW LONGVIEW PHASE 2 DRAINAGE AREA MAP

olsson

1301 Burlington Street
North Kansas City, MO 64116

olsson.com
TEL 816.361.1177

Olsson - Engineering
Missouri COA #001592

EXHIBIT

01

F:\2024\06501-07000\024-06991-A\40-Design\Reports\SDN\Drainage Map Exhibit.dwg
DATE: Mar 20, 2025 10:41am USER: ssaylor

EXHIBIT 02

NEW LONGVIEW - B&B THEATER STORMWATER DRAINAGE AREAS

N

0' 15' 30' 60'
SCALE IN FEET

hollis + miller architects
relationships ◎ results

8205 W 108th Terrace
Overland Park, KS 66210
t 913.451.8886
f 913.451.0220

220 NW Executive Way
Lee's Summit, MO 64063
t 816.525.5600
f 816.525.3028

HOLLISANDMILLER.COM

Hollis + Miller Architects
Kansas State Certificate of Authority
Architecture # A-198
Structure # E-1334

Olsson Associates
Civil Engineering
State Certificate of Authority #
1301 Burlington, Suite 100
North Kansas City, Jackson County, MO 64116
816.587.4320 phone
816.587.1393 fax

Confluence
Landscape Design
State Certificate of Authority #
417 Delaware, Jackson County, MO 64105
816.531.7227 phone

Henderson Engineering, Inc.
Mechanical, Electrical, & Plumbing Engineering
State Certificate of Authority #
1801 Main Street, Suite 300
Kansas City, Jackson County, MO 64108
816.663.8700 phone
816.663.8701 fax

B&B THEATRES – NEW LONGVIEW 7
BOX Real Estate Development
3201 SW Fascination Drive
Lee's Summit, MO 64081

REVISIONS:

#	Description	Date

STATE OF MISSOURI
MELISSA G. DEGONIA
NUMBER PE-2011000892
PROFESSIONAL ENGINEER

Melissa G DeGonia, P.E.
MO# 2011000892

JOB NO: L16-0217
DRAWN BY: D.A.L.G.
CHECKED BY: M.D.D.
DATE: 03.07.2017

DRAINAGE PLAN

C11

DWG: F:\2016\0001-0500\L16-0217\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Site Plans_36x24\C_DRN01_L16-0217.dwg USER: jking
DATE: Mar 07, 2017 5:05pm

Please consider the environment before printing this.

NEW LONGVIEW PHASE 2

PRELIMINARY DRAINAGE STUDY

NEW LONGVIEW PHASE 2

PRELIMINARY STORMWATER DRAINAGE STUDY

Submitted: September 2, 2016

Proposed Mixed Use Development located in:
NW ¼ Section 10, Township 47N, Range 32W
Lee's Summit, Jackson County, Missouri

Cedar Creek Watershed

Prepared For:
BOX Real Estate Development
920 SW Ovation Drive
Lee's Summit, MO 64081

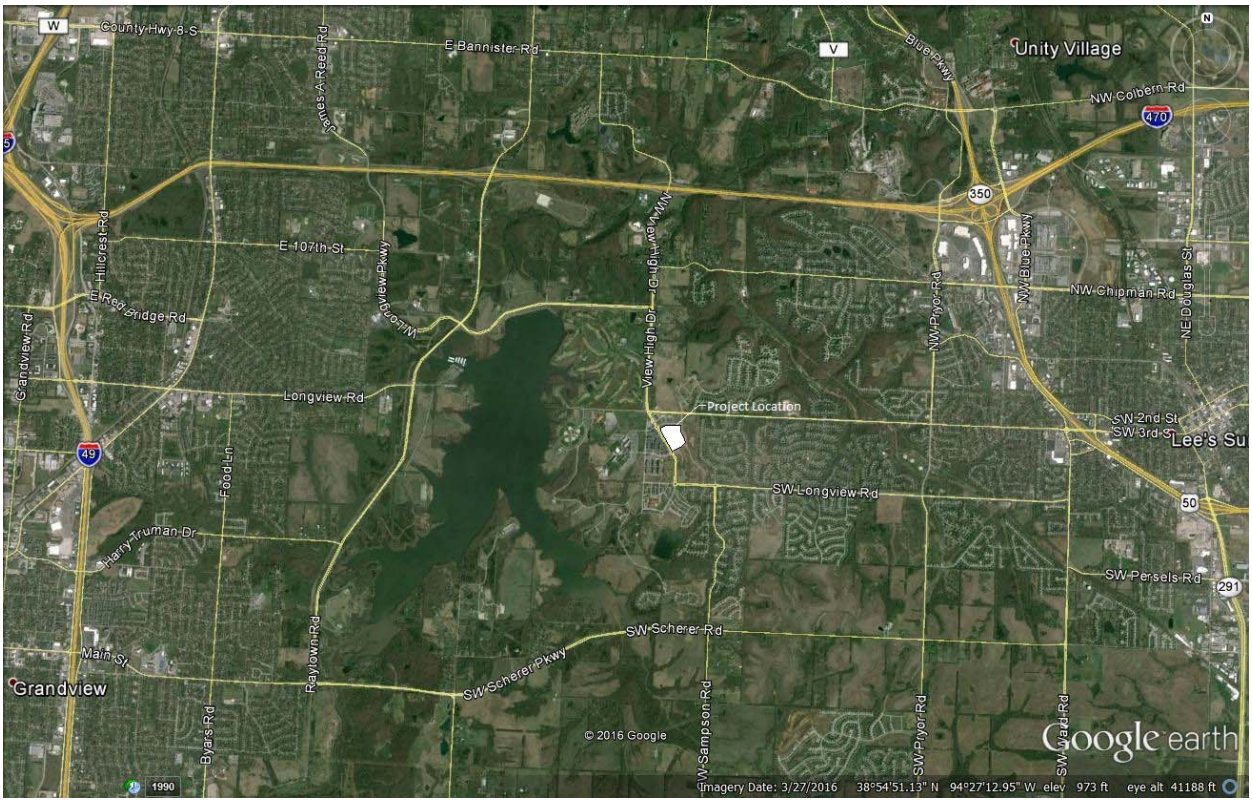
1301 Burlington #100
North Kansas City, MO 64116
816.587.4320
816.587.1393 fax
www.olssonassociates.com

Table of Contents

1.) General Information:

New Longview Phase 2 is proposed as a 5-lot mixed used development with apartments, townhomes, office, retail and restaurant buildings and a new theater. The project is at the southeast corner of the intersection of SW Fascination Drive and SW Longview Boulevard. This locates the project in the NW ¼ of Section 10, Township 47 N, Range 32 W, Lee's Summit, Jackson County, Missouri.

Stormwater runoff from New Longview Phase 2 is conveyed into two separate sub-watersheds, both of which flow to existing storm sewer systems that discharge to unnamed tributaries to Cedar Creek. This Preliminary Stormwater Drainage Study will evaluate the hydrologic impact generated by the construction of New Longview Phase 2.



New Longview Phase 2 Vicinity Map

1.1) <u>FEMA Floodplain Classification:</u>

Zone X is the FEMA flood insurance rate zone that corresponds to "areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or within drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood."

1.2) Soil Classifications

Soil Maps published in the Soil Survey of Jackson County, Missouri, categorize soils on the Kessler Ridge property as:

Map Unit	Name	Slopes
10120	Sharpsburg silt loam	2% to 5%
10128	Sharpsburg-Urban land complex	2% to 5%
30080	Greenton silty clay loam	5% to 9%
10181	Udarents-Urban land-Sampsel complex	5% to 9%

2.) Methodology

This Preliminary Stormwater Drainage Study has been prepared to evaluate the hydrologic impact generated by development of New Longview Phase 2. The base data for the models prepared for this report has been obtained from site visits, available online maps and aerial imagery.

The following methods were used in this study to model Existing and Proposed Conditions for stormwater runoff:

- Haestad Methods, Inc. "PondPack" v8i
  TR-55 Unit Hydrograph Method
  - 2-year, 10-year and 100-year Return Frequency storms
  - ARC II Soil Moisture conditions
  - 24-Hour SCS Type II Rainfall Distribution
  - SCS Runoff Curve Numbers per SCS TR-55 (Tables 2-2a – 2-2c)
  - SCS TR-55 Methods for determination of Time of Concentration and Travel Time. Where specific data pertaining to channel geometry is not available, "length & velocity" estimates for channel-flow Travel Time is utilized per Section 5600, Kansas City APWA Standard Specifications and Design Criteria.

The following approved drainage studies were referenced in preparation of this report:

- Letter to Lee's Summit for Storm Water Detention for proposed development of a parcel of land at Longview Boulevard and SW 3rd Street, New Longview – Lee's Summit, MO, September 27, 2006, which references the regional detention analyzed in the Winterset Valley and New Longview Storm Water Detention Report, prepared by Hamilton Sterrett, June 29, 2004
- A copy of the Winterset Valley and New Longview Storm Water Detention Report, has been requested from the City of Lee's Summit. An addendum to this study can be provided if necessary when that is available.
- Kessler Ridge at New Longview Macro and First Plat Micro Stormwater Drainage Study, prepared by Lutjen Inc., September 24, 2015

3.) Existing Conditions Analysis

This section of the Preliminary Stormwater Drainage Study has been prepared to evaluate the Existing Conditions related to stormwater runoff. Section 4 will evaluate the site under Proposed Conditions. The purpose of this report is to evaluate the Proposed Conditions stormwater discharge from the property and to ensure that there are no adverse conditions generated by the development. In order to quantify the effects of development of this project, the following areas have been used for both Existing and Proposed Conditions analyses.

The portion of New Longview Phase 2 which flows to the southeast contributes to ***Subarea A5***, as defined in the Kessler Ridge at New Longview report. Total modeled area within Subarea A5 is

40.93 acres under Existing Conditions. Approximately 8.42 acres of New Longview Phase 2 lies within this watershed. The remainder of the watershed consists predominantly of offsite single-family residential area to the east and apartments to the west.

Previous development in this area constructed a detention basin into which this portion of New Longview Phase 2 will discharge. This basin was constructed with Kessler Ridge at New Longview, and is referred to in this study as ***Basin A5*** in conformance with the previously approved drainage study.

The portion of New Longview Phase 2 which flows to the north contributes to **Subarea B**, as defined in this report. Total area within Subarea B is 126.01 acres under Existing Conditions. Approximately 4.72 acres of New Longview Phase 2 lies within this watershed. The remainder of the watershed consists of offsite single family residential and commercial areas to the north.

According to the drainage letter for New Longview (referenced above), previous development in this area constructed a detention basin into which this portion of New Longview Phase 2 will discharge. This basin was constructed with Winterset Valley 1st Plat. The drainage areas in that report used a CN value of 93 for stormwater modeling.

The following tables summarize the results of the Existing Conditions analysis. The intent of this report is to evaluate the hydrologic impact created by construction of New Longview Phase 2. The Proposed Conditions discharge data will be compared to these Existing Conditions results. The Existing Conditions stormwater runoff model simulates the 2, 10 and 100-year design storm events. Refer to the Drainage Area Map (Exhibit 8-3.1) for subarea locations, Runoff Curve Numbers, and tributary acreage. Refer to Section 7.1 for output from the Existing Conditions model. The following tables contain input data and summarize the computed results from the PondPack model for New Longview Phase 2 Existing Conditions.

Table 3-1 New Longview Phase 2 Existing Conditions Subarea Data

Subarea:	Area (ac.):	Composite CN	T_C (hr.)
Subarea A5	40.93	82	0.129

Table 3-2 New Longview Phase 2 Existing Conditions Runoff Data: Subarea Peak Discharge Rates

Subarea:	Q_2 (cfs)	Q_{10} (cfs)	Q_{100} (cfs)
A5	96.77	180.81	315.43

The existing Basin A5 accepts runoff from all of Subarea A5, most of which is currently developed, except for a small area to the north of the basin, and the New Longview Phase 2 property. The basin currently provides detention in conformance with the approved Kessler Ridge at New Longview drainage study. Basin A5 was designed with the proposed New Longview Phase 2 property in mind, as well as the remaining undeveloped area within A5. The table below shows the basin in its existing state, with some areas remaining to be developed.

Table 3-4 Basin A5 Existing Conditions Detention Basin Data

	Peak Q In (cfs)	T_P In (hr.)	Peak Q Out (cfs)	T_P Out (hr.)	V_R (ac-ft)	Peak W.S.E.	Max. Storage Volume (ac-ft)
2-Year	96.77	11.96	3.71	14.51	5.608	960.03	3.631
10-Year	180.11	11.95	52.73	12.15	10.443	960.83	4.779
100-Year	315.43	11.95	101.94	12.14	18.469	962.77	8.044

The existing basin with Winterset Valley accepts runoff from all of Subarea B, most of which is currently developed, except for the New Longview Phase 2 property. The basin currently provides detention in conformance with the approved Winterset Valley and New Longview drainage study.

The basin was design using a CN of 93 for the contributing area. The analysis in Section 4 will show that the proposed CN for New Longview Phase 2 will not exceed the assumed drainage area.

4.) Proposed Conditions

The Proposed Conditions section of analysis assumes completion of New Longview Phase 2. As in the Existing Conditions section, this Proposed Conditions stormwater runoff model was created and run for the 2, 10 and 100-year design storm events. Refer to Section 7.2 for output from the Proposed Conditions model. The following tables contain input data and summarize the computed results from the PondPack model for Proposed Conditions. After the results of this Proposed Conditions model are presented, they will be compared to the Existing Conditions results. Any variation in computed discharge rates from Existing to Proposed Conditions will be a direct result of construction of New Longview Phase 2.

Table 4-1 New Longview Phase 2 Proposed Conditions Subarea Data

Subarea:	Area (ac.):	Composite CN	T_C (hr.)
Subarea A5	83	40.92	0.129

Table 4-2 New Longview Phase 2 Proposed Conditions Runoff Data: Subarea Peak Discharge Rates

Subarea:	Q_2 (cfs)	Q_{10} (cfs)	Q_{100} (cfs)
Subarea A5	114.85	202.05	337.61

Table 4-3 Basin A5 Proposed Conditions Detention Basin Data

	Peak Q In (cfs)	T_P In (hr.)	Peak Q Out (cfs)	T_P Out (hr.)	V_R (ac-ft)	Peak W.S.E.	Max. Storage Volume (ac-ft)
2-Year	114.85	11.95	9.23	12.74	6.627	960.12	3.745
10-Year	202.05	11.95	67.56	12.13	11.756	961.21	5.362
100-Year	337.61	11.95	109.38	12.13	20.063	963.19	8.830

According to the approved Kessler Ridge First Plat drainage study, the approved peak flow rates from Subarea A5 are as shown in the table below, with a comparison to the proposed discharge after development of New Longview Phase 2.

Table 4-4 New Longview Phase 2 Subarea A5 Peak Discharge Comparison (Approved vs. Proposed)

	Q_2 (cfs)	Q_{10} (cfs)	Q_{100} (cfs)
Proposed	114.85	202.05	337.61
Approved:	115.44	203.09	339.34
Difference:	-0.59	-1.04	-1.73

Because we have not yet attained a copy of the approved drainage study showing the regional detention to the north, for Subarea B, this study will only include a Curve Number calculation comparison to the approved CN. Below is a calculation of the CN for New Longview Phase 2, within Subarea B.

Table 4-5 New Longview Phase 2 Curve Number Calculation (within Subarea B)

	Land Use	Curve Number	Area
New Longview Phase 2 within Subarea B	Impervious	98	3.84
	Pervious	74	0.89
	Total	**93**	**4.73**

5.) Summary

This Preliminary Stormwater Drainage Study has been prepared to evaluate the hydrologic impact generated by development of New Longview Phase 2. The proposed project will drain to two existing offsite detention facilities.

Section 3 of this report determined the baseline conditions reflecting the Existing Conditions for the project site. Section 4 showed the site under developed conditions and demonstrated that flows to the existing detention facilities are within approved limits.

6.) Conclusions

New Longview Phase 2 is proposed as a 5-lot mixed used development with apartments, townhomes, office, retail and restaurant buildings and a new theater. This report has been prepared to evaluate the development to ensure that stormwater discharge from the site will remain within acceptable levels. Existing Basins constructed with Winterset 1st Plat and Kessler Ridge 1st Plat will provide detention for the site.

In conclusion all points of interest exhibit Proposed Conditions peak discharges for all events that are at or below the established limits.

It is therefore requested that Lee's Summit, Missouri approve this "New Longview Phase 2 Preliminary Stormwater Drainage Study." This study will be verified with final construction documents for the first phase of construction within New Longview Phase 2.

SECTION 7.1 EXISTING CONDITIONS SUMMARY

Project Summary	
Title	NEW LONGVIEW PHASE 2
Engineer	MGD
Company	OLSSON ASSOCIATES
Date	9/1/2016

Notes

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SECTION 7.1 EXISTING CONDITIONS SUMMARY

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)
SUB A5	2-Year	2	5.608	11.960	96.77
SUB A5	10-Year	10	10.443	11.950	180.81
SUB A5	100-Year	100	18.469	11.950	315.43
SUB A4	2-Year	2	1.366	11.980	22.86
SUB A4	10-Year	10	2.482	11.980	41.22
SUB A4	100-Year	100	4.312	11.960	70.25
SUB A2	2-Year	2	9.847	12.040	146.26
SUB A2	10-Year	10	17.676	12.020	260.09
SUB A2	100-Year	100	30.429	12.020	439.72
SUB A3	2-Year	2	1.891	12.010	30.14
SUB A3	10-Year	10	3.436	12.000	54.38
SUB A3	100-Year	100	5.968	11.990	92.61
SUB A1	2-Year	2	0.821	12.050	11.57
SUB A1	10-Year	10	1.510	12.040	21.29
SUB A1	100-Year	100	2.646	12.040	36.80

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)
PT A4	2-Year	2	6.788	11.980	23.91
PT A4	10-Year	10	12.731	12.070	76.61
PT A4	100-Year	100	22.585	12.020	158.70
PT A3	2-Year	2	8.679	12.010	54.05
PT A3	10-Year	10	16.167	12.070	120.73
PT A3	100-Year	100	28.552	12.020	247.45
PT A2	2-Year	2	18.525	12.040	200.10
PT A2	10-Year	10	33.842	12.070	357.57
PT A2	100-Year	100	58.981	12.040	681.81
PT A1	2-Year	2	19.345	12.060	211.64
PT A1	10-Year	10	35.351	12.060	378.16
PT A1	100-Year	100	61.626	12.060	718.25

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
BASIN A5 (IN)	2-Year	2	5.608	11.960	96.77	(N/A)	(N/A)

SECTION 7.1 EXISTING CONDITIONS SUMMARY

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
BASIN A5 (OUT)	2-Year	2	5.421	14.510	3.71	960.03	3.631
BASIN A5 (IN)	10-Year	10	10.443	11.950	180.81	(N/A)	(N/A)
BASIN A5 (OUT)	10-Year	10	10.248	12.150	52.73	960.83	4.779
BASIN A5 (IN)	100-Year	100	18.469	11.950	315.43	(N/A)	(N/A)
BASIN A5 (OUT)	100-Year	100	18.273	12.140	101.94	962.77	8.044

SECTION 7.1 EXISTING CONDITIONS SUMMARY

Index

SECTION 7.2 PROPOSED CONDITIONS SUMMARY

Project Summary	
Title	NEW LONGVIEW PHASE 2
Engineer	MGD
Company	OLSSON ASSOCIATES
Date	9/1/2016

Notes

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SECTION 7.2 PROPOSED CONDITIONS SUMMARY

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)
SUB A5	2-Year	2	6.627	11.950	114.85
SUB A5	10-Year	10	11.756	11.950	202.05
SUB A5	100-Year	100	20.063	11.950	337.61
SUB A4	2-Year	2	1.366	11.980	22.86
SUB A4	10-Year	10	2.482	11.980	41.22
SUB A4	100-Year	100	4.312	11.960	70.25
SUB A2	2-Year	2	9.847	12.040	146.26
SUB A2	10-Year	10	17.676	12.020	260.09
SUB A2	100-Year	100	30.429	12.020	439.72
SUB A3	2-Year	2	1.891	12.010	30.14
SUB A3	10-Year	10	3.436	12.000	54.38
SUB A3	100-Year	100	5.968	11.990	92.61
SUB A1	2-Year	2	0.821	12.050	11.57
SUB A1	10-Year	10	1.510	12.040	21.29
SUB A1	100-Year	100	2.646	12.040	36.80

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)
PT A4	2-Year	2	7.803	11.980	24.07
PT A4	10-Year	10	14.044	12.050	98.08
PT A4	100-Year	100	24.178	12.020	166.88
PT A3	2-Year	2	9.694	12.010	54.21
PT A3	10-Year	10	17.480	12.070	144.73
PT A3	100-Year	100	30.145	12.020	255.92
PT A2	2-Year	2	19.540	12.040	200.27
PT A2	10-Year	10	35.155	12.050	388.78
PT A2	100-Year	100	60.574	12.040	690.86
PT A1	2-Year	2	20.361	12.060	211.81
PT A1	10-Year	10	36.665	12.070	409.83
PT A1	100-Year	100	63.219	12.060	727.30

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
BASIN A5 (IN)	2-Year	2	6.627	11.950	114.85	(N/A)	(N/A)

SECTION 7.2 PROPOSED CONDITIONS SUMMARY

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
BASIN A5 (OUT)	2-Year	2	6.437	12.740	9.23	960.12	3.745
BASIN A5 (IN)	10-Year	10	11.756	11.950	202.05	(N/A)	(N/A)
BASIN A5 (OUT)	10-Year	10	11.562	12.130	67.56	961.21	5.362
BASIN A5 (IN)	100-Year	100	20.063	11.950	337.61	(N/A)	(N/A)
BASIN A5 (OUT)	100-Year	100	19.866	12.130	109.38	963.19	8.830

SECTION 7.2 PROPOSED CONDITIONS SUMMARY

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NEW LONGVIEW PHASE 2

Floodplain Map
Exhibit 8-1.1

LEGEND

NEW LONGVIEW, PHASE 2

100-YEAR FLOODPLAIN

Source:
FEMA Flood Boundary &
Floodway Map
2901740019C

N

0 800 1,600 Feet

1 ' = 800 "

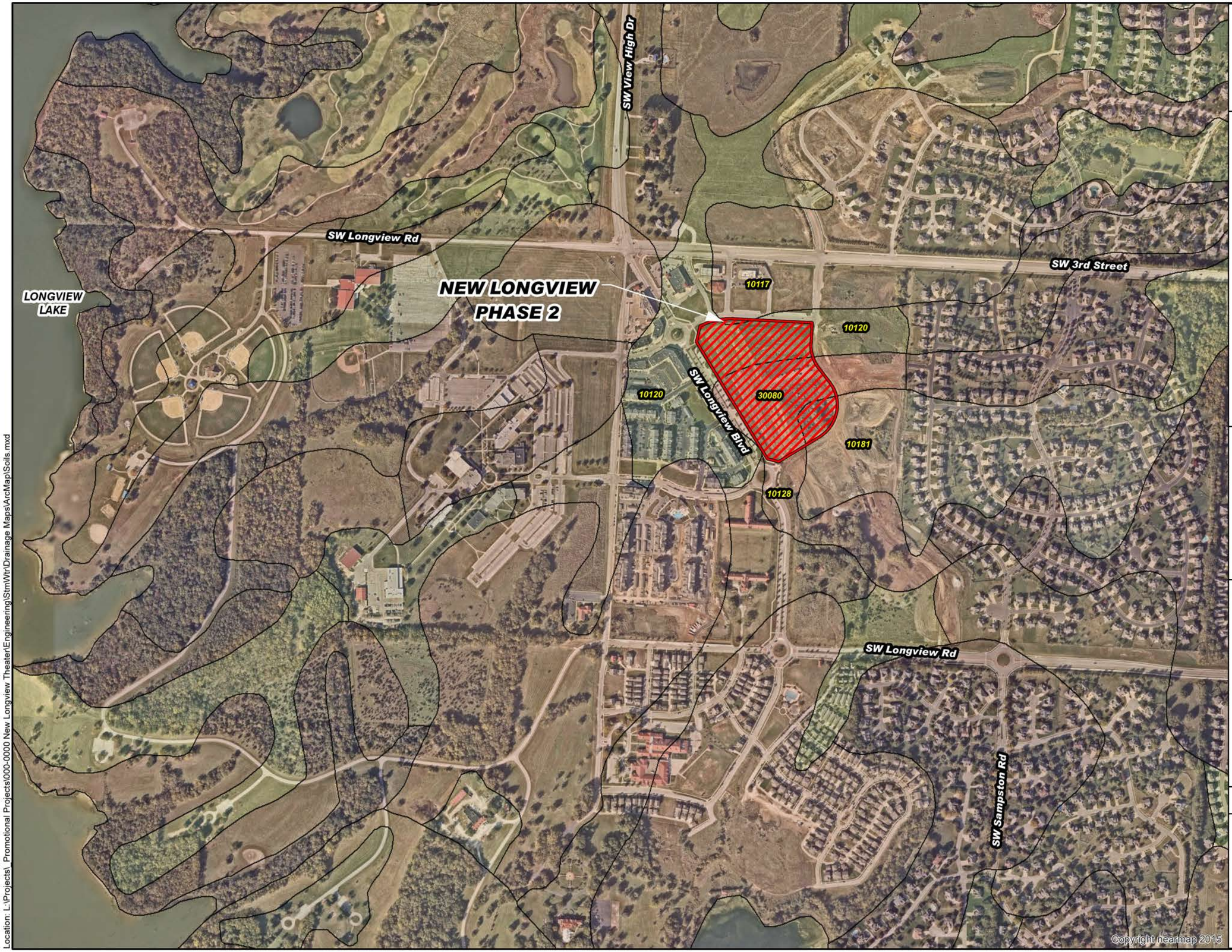
Proj. #: 15034 Drawn: JRW 9/2/2016

OLSSON ASSOCIATES

Location: L:\Projects_Promotional Projects\000-0000 New Longview Theater\Engineering\StmWtr\Drainage Maps\ArcMap\Floodplain.mxd

NEW LONGVIEW PHASE 2

Soils Map
Exhibit 8-1.2



LEGEND

NEW LONGVIEW, PHASE 2

10117 - Sampsel silty clay loam, 5 to 9% slopes
10120 - Sharpsburg silt loam, 2 to 5% slopes
10128 - Sharpsburg-Urban land complex, 2 to 5% slopes
10181 - Udarents-Urban land-Sampsel complex, 5 to 9% slopes
30080 - Greenton silty clay loam, 5 to 9% slopes

Source:
Soil Survey of Jackson County, Missouri

N

0 600 1,200
Feet

1 ' = 600 "

Proj. #: 00000 Drawn: JRW 9/2/2016

OLSSON ASSOCIATES

Location: L:\Projects_Promotional Projects\000-0000 New Longview Theater\Engineering\StmWtr\Drainage Maps\ArcMap\Soils.mxd

NEW LONGVIEW PHASE 2

Drainage Area Map
Exhibit 8-3.1

LEGEND

Existing Ridge Lines

New Longview Phase 2 Property Boundary

Existing Detention Facilities

N

0' 500' 1000'

1" = 500'

Proj. #: 016-2608 Drawn: MGD Date: 09-01-16

LUTJEN

1301 Burlington, #100
North Kansas City, MO 64116
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surveying
planning
engineering
landscape architecture