A Collaboration Between the City of Coeur d'Alene and CDA 2030

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To:	Alex Dupey, MIG
From:	Nick Foster, AICP, RSP and Rachel Grosso
Re:	Final and Preliminary Scenarios Transportation Evaluation
Date:	July 20, 2021
Project Name	Envision Coeur d'Alene
Project Number	23887.0

Introduction

The City of Coeur d'Alene is updating its comprehensive plan. As part of this update, the City initially evaluated three alternative land-use scenarios (i.e., Compact, Corridor, and District). Following this initial evaluation, Planning Commission and City Council directed that the Compact and District scenarios be moved forward for additional analysis before selecting a final preferred scenario. This memorandum provides a high-level evaluation of these two scenarios (revised from the December 2020 draft analysis), as well as the Final Preferred scenario, with respect to their effects on, and compatibility with, the existing and planned transportation system. It assesses traffic volumes and operations for each land-use scenario. It also compares the areas of growth from each scenario to the planned and existing transportation infrastructure.

Land-use Scenarios

This memorandum evaluates two preliminary land-use scenarios and the Final Preferred scenario provided by MIG.

- **Preliminary Scenarios:**
    - **Compact** - envisions increasing jobs and housing primarily in the central portion of the city through infill and redevelopment of commercial areas.
    - **District** - locates jobs and housing in concentrated areas around the city to provide a mix of uses, including housing and retail.
- **Final Preferred Scenario** – structured similar to the Compact scenario with some changes to land-uses in certain locations that result in lower population and employment.

The two preliminary scenarios include development in the north along Huetter Road and US 95 but differ in the proposed land-use for that development.

The Compact scenario focuses on mixed use development along US 95, Government Way, Seltice Way, the 3rd/4th Street couplet, Huetter Road, and around the I-90/Northwest Boulevard interchange.

The District scenario is like the Compact scenario in terms of the areas proposed for mixed use development. A major difference between the two scenarios is that the District scenario proposes areas around I-90 and Huetter Road be employment centers. The District scenario also provides for more commercial areas along US 95.

The Final Preferred scenario is similar to the Compact scenario. It differs in that it applies lower density place types to certain areas, particularly in the northern portion of the city along US 95 and near Huetter Road.

Figure 1 and Figure 2 summarize the differences in dwelling units and employment, respectively, among the three scenarios, as well as the 2040 Base scenario (i.e., the projected land-uses in the current adopted KMPO model) for the City of Coeur d'Alene's area of city impact (ACI). The numbers in both figures are taken directly from the KMPO model, which may not exactly match the numbers in the final Comprehensive Plan due to differences in boundaries (i.e., the model's transportation analysis zone (TAZ) boundaries do not exactly match the City's ACI boundary) and in the types of land-uses that the model is able to consider.

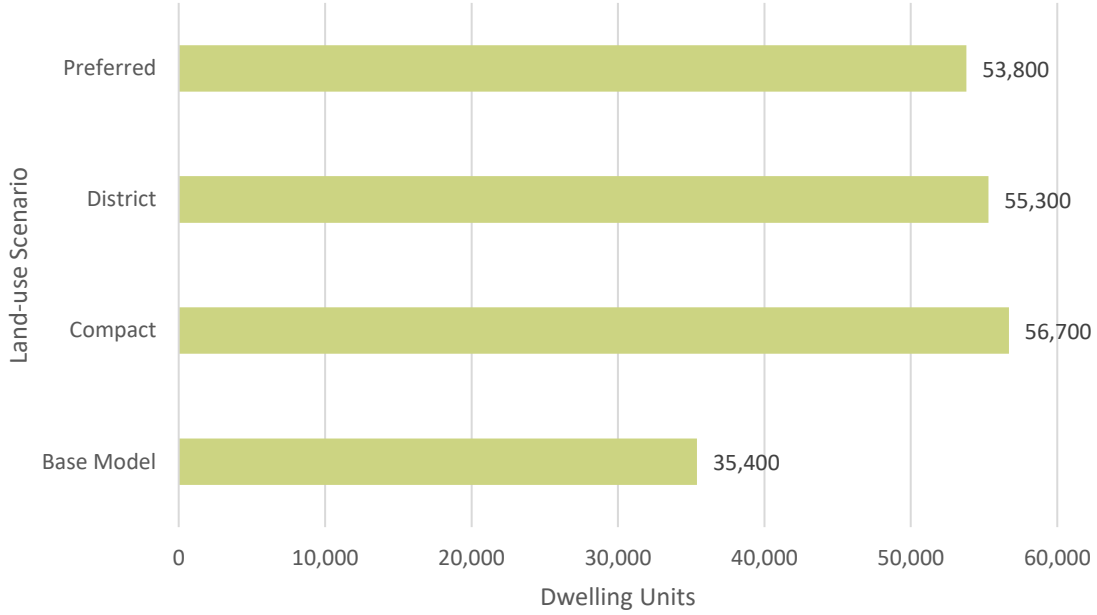

Figure 1 – Projected 2040 Coeur d'Alene ACI Dwelling Units by Land-use Scenario

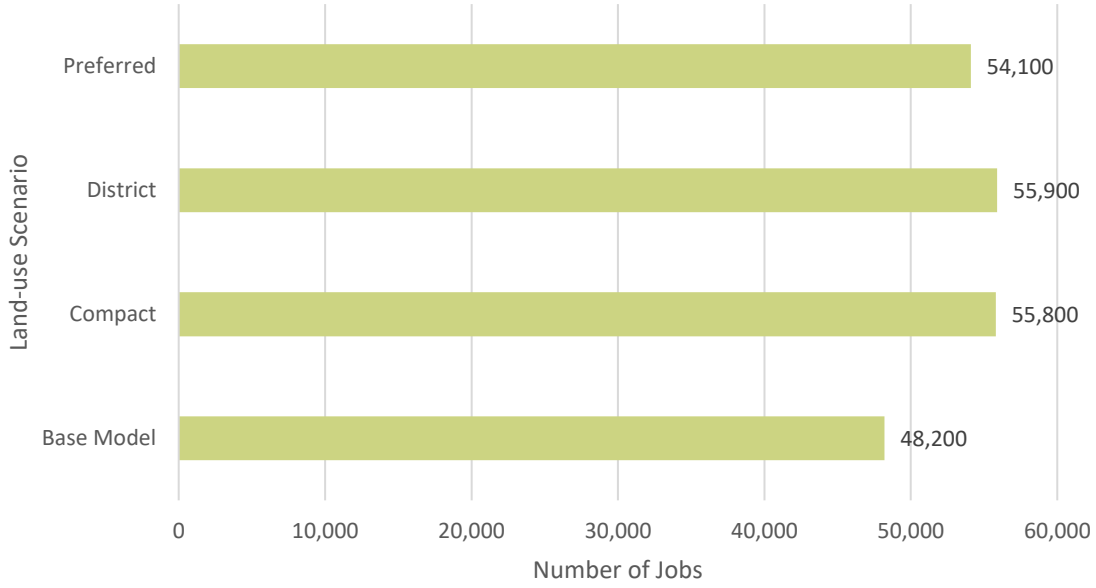

Figure 2 – Projected 2040 Coeur d'Alene ACI Employment by Land-use Scenario

All scenarios project more growth than the base scenario. The Compact scenario results in the greatest number of dwelling units and a similar number of jobs to the District Scenario. The Final Preferred scenario has slightly lower dwelling unit and employment numbers than the Compact and District scenarios.

Transportation Evaluation

The following section evaluates each of the land-use scenarios with respect to their transportation effects. This evaluation includes traffic volumes, traffic operations, and compatibility with planned and existing infrastructure.

The analysis is based on the Kootenai Metropolitan Organization (KMPO) travel demand model. KMPO provided peak hour year 2040 volumes based on the adopted future transportation network. The demographic changes for each scenario were coordinated between KMPO and MIG. The analysis is primarily based on these PM peak hour volumes and all model volumes are used "as-is" without any post-processing. This is a high-level analysis meant to document the general differences between the scenarios with respect to transportation and includes a mixture of quantitative and qualitative assessments.

TRAFFIC VOLUMES

Figure 3 shows the projected 2040 average daily vehicle miles traveled (VMT) across the scenarios within the Coeur d'Alene ACI. *The volumes in the figure illustrate the general order of magnitude of projected future travel demand and the volumes should not be taken as absolute projections.*

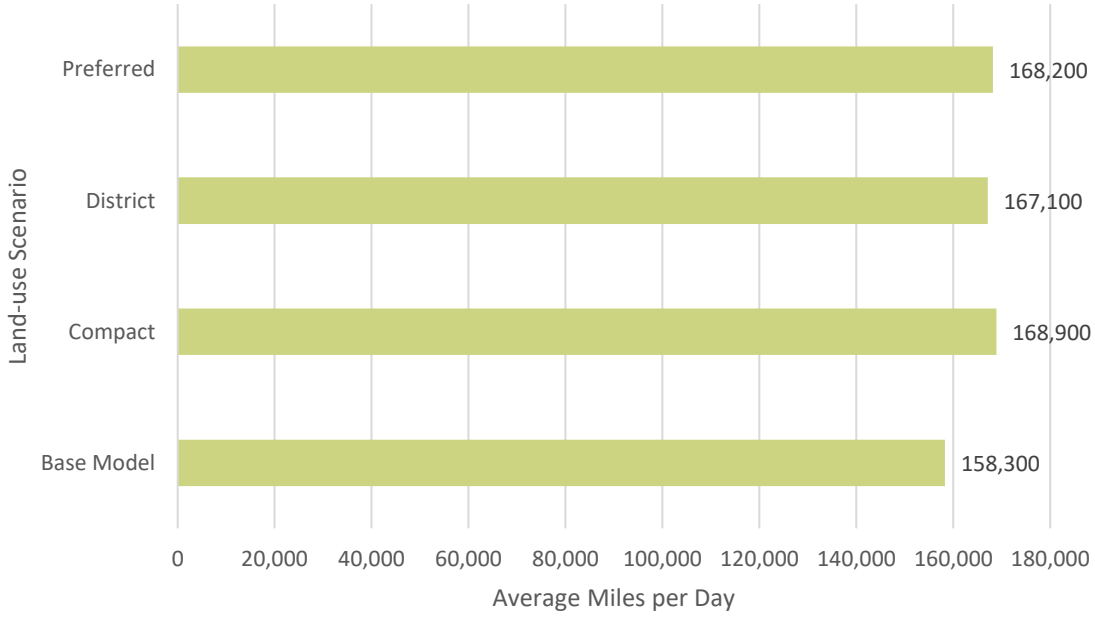

Figure 3 – Projected 2040 Average Daily VMT within Coeur d'Alene ACI

All scenarios are projected to result in an increased average daily VMT compared to the Base 2040 model. The District scenario is projected to exceed the Base 2040 scenario by about 9,000 miles per day, while the Compact and Final Preferred scenarios are projected to exceed it by about 10,000 - 11,000 miles per day. These changes in VMT are largely due to the increased population and employment in these scenarios compared to the 2040 Base scenario.

Figures 4 and 5 show the average VMT per dwelling unit and job, respectively, for each scenario. Each of the scenarios result in lower amount of travel per dwelling unit or job than the Base 2040 scenario, indicating they are more efficient scenarios from a transportation perspective. This efficiency may come from the proximity in which jobs and other attractors are to residences in these scenarios compared to the lower-density base conditions.

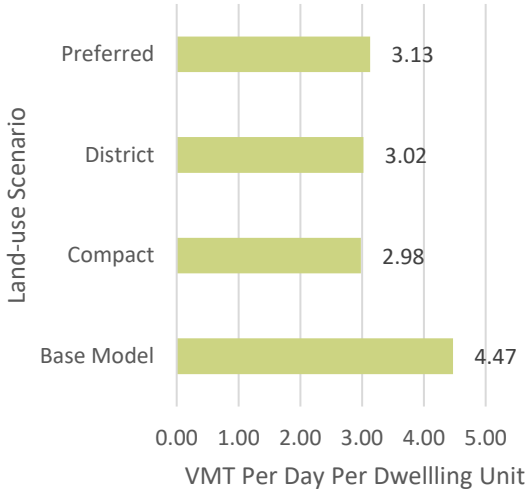

Figure 4 - Projected 2040 Miles Per Day Per Dwelling Unit within Coeur d'Alene ACI

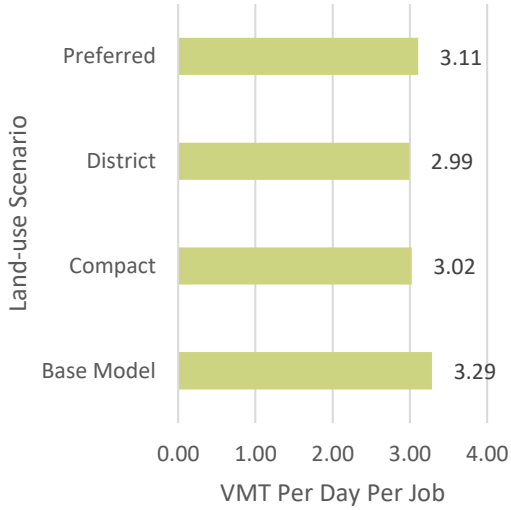

Figure 5 - Projected 2040 Miles Per Day Per Job within Coeur d'Alene ACI

Figures 6-9 show the PM peak hour volumes for each scenario. The volumes shown in the figures are the total volumes for both directions for each segment. *The figures provided illustrate the general order of magnitude of projected future travel demand and the volumes should not be taken as absolute projections.*

All scenarios show a decrease in volumes when compared to the 2040 Base model on certain corridors in the following areas:

- Southwest portion of the city across the Spokane River
- Northeast portion of the city
- Southeast portion of the city

The traffic volumes in the Final Preferred scenario are generally similar to the Compact scenario, with slight differences on certain roads scattered throughout the City.

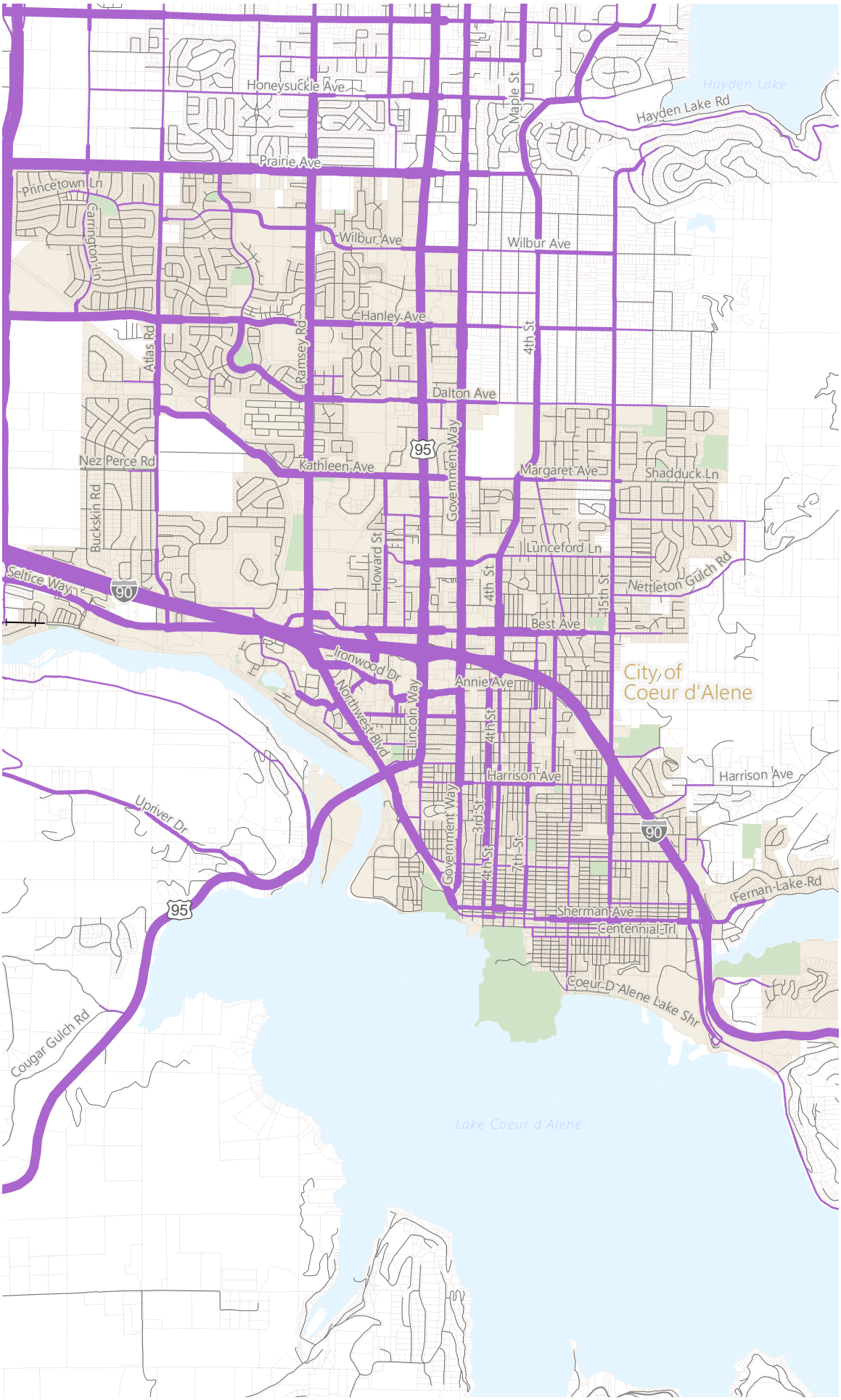

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Figure 6

2040 PM Peak Hour Traffic Volumes Base Model Scenario

PM Peak Hour Volume
- 0 - 500
- 501 - 1,000
- 1,001 - 1,700
- 1,701 - 3,000
- 3,001 - 6,421
- City Parks
- City Limits

0 ¼ ½ 1 Mile

Map Date: July 2021
Source: Coeur D'Alene, 2019.
Prepared by Kittelson & Associates, Inc
Volume Data Source: Kootenai MPO
Year 2040 Travel Demand Model

*Volume shown are taken directly from the travel demand model and are meant to only illustrate general order of magnitude of future demand and should not be taken as an absolute projection.

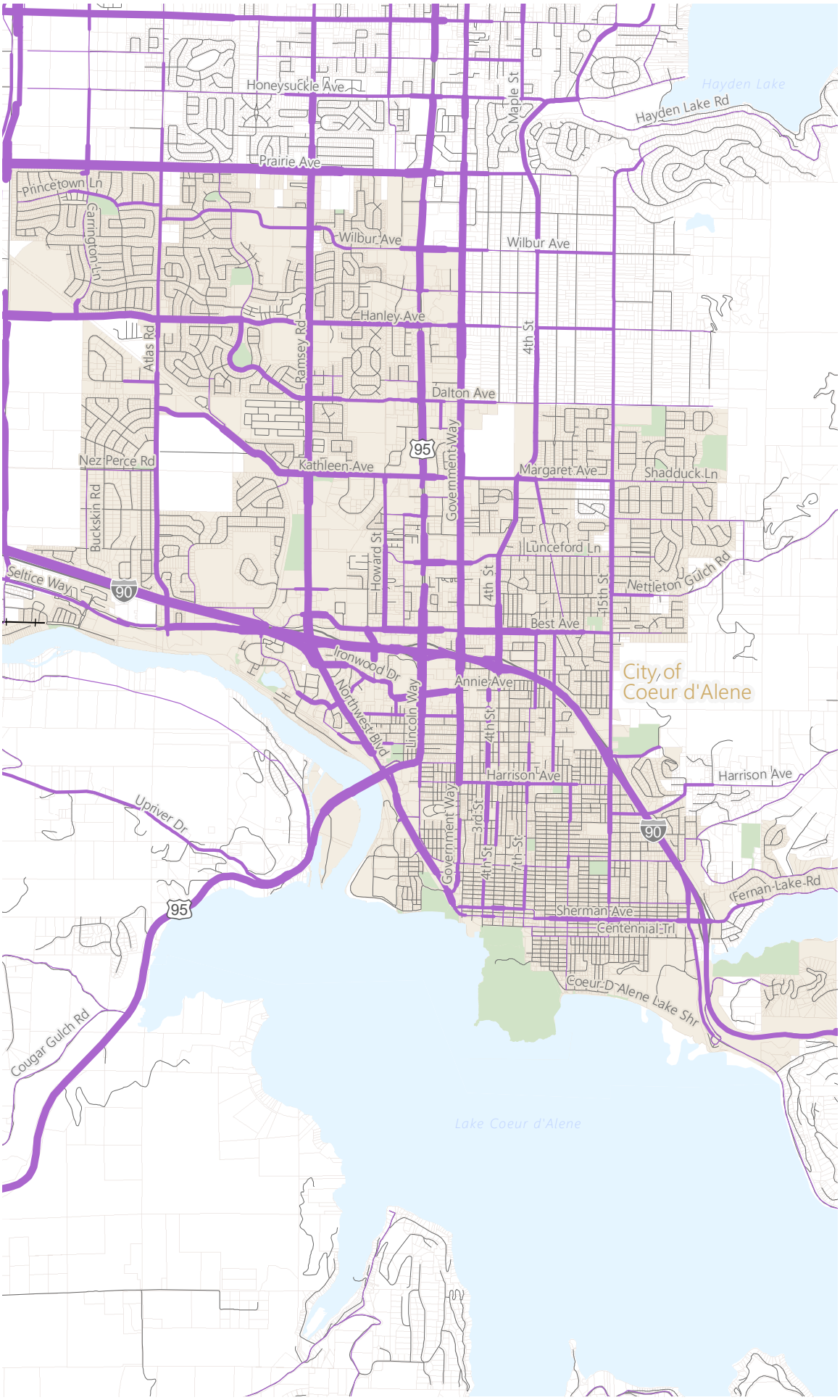

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Figure 7

2040 PM Peak Hour Traffic Volumes Compact Model Scenario

PM Peak Hour Volume
- 0 - 500
- 501 - 1,000
- 1,001 - 1,700
- 1,701 - 3,000
- 3,001 - 6,550
- City Parks
- City Limits

Mile
0 ¼ ½ 1

Map Date: July 2021
Source: Coeur D'Alene, 2019.
Prepared by Kittelson & Associates, Inc
Volume Data Source: Kootenai MPO
Year 2040 Travel Demand Model

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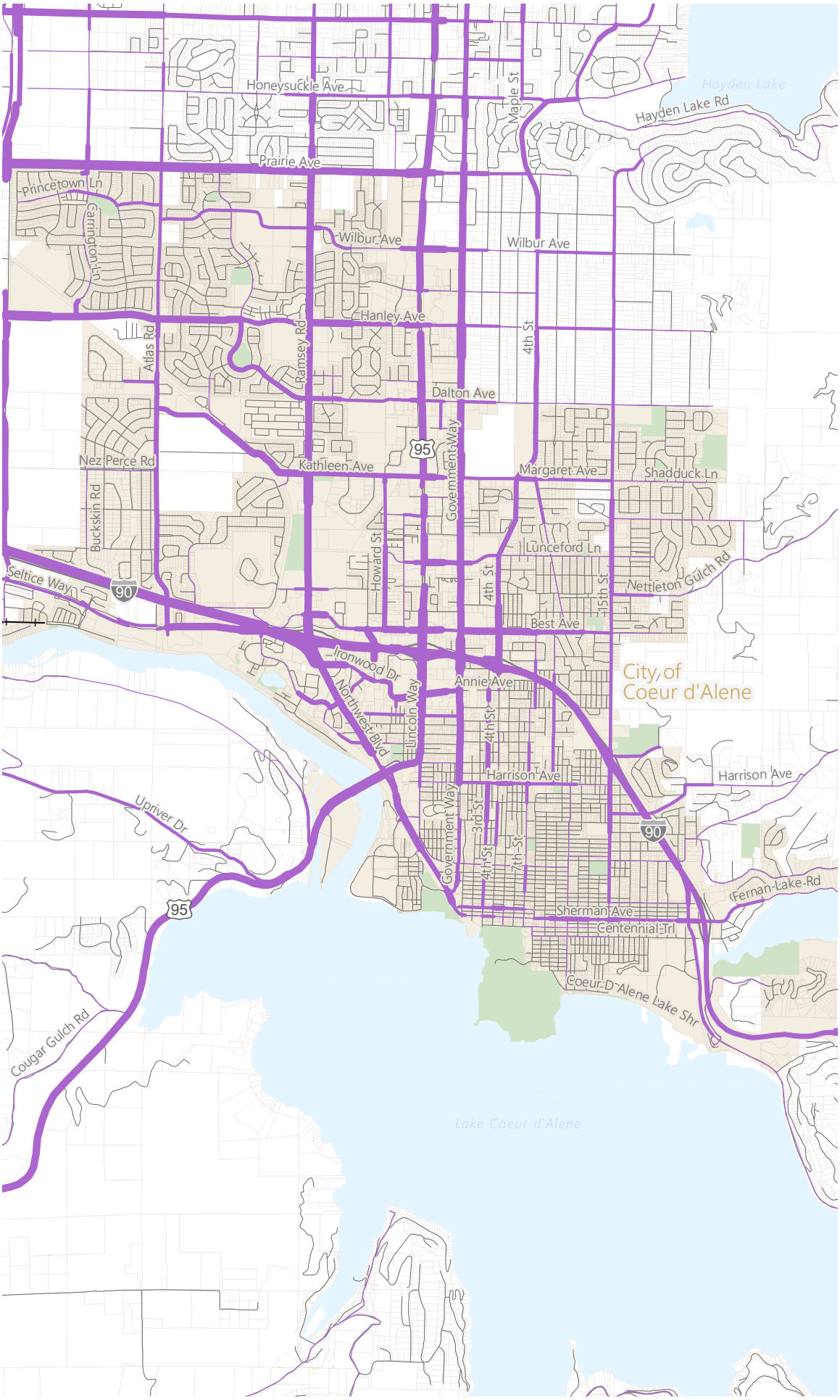

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Figure 8

2040 PM Peak Hour Traffic Volumes District Model Scenario

PM Peak Hour Volume
- 0 - 500
- 501 - 1,000
- 1,001 - 1,700
- 1,701 - 3,000
- 3,001 - 6,485
- City Parks
- City Limits

Mile
0 ¼ ½ 1

Map Date: July 2021
Source: Coeur D'Alene, 2019.
Prepared by Kittelson & Associates, Inc
Volume Data Source: Kootenai MPO
Year 2040 Travel Demand Model

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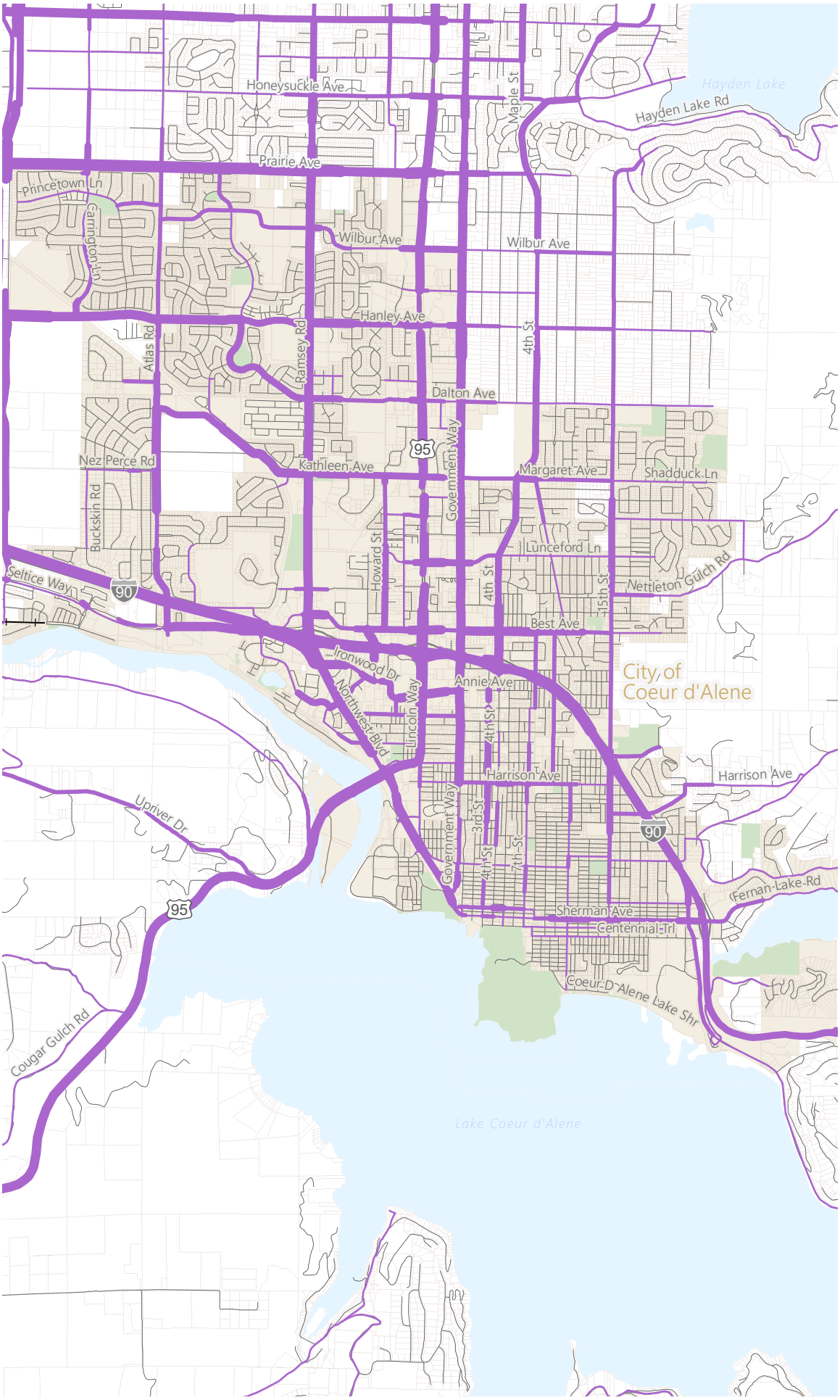

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Figure 9

2040 PM Peak Hour Traffic Volumes Final Preferred Scenario

PM Peak Hour Volume
- 0 - 500
- 501 - 1000
- 1001 - 1700
- 1701 - 3000
- 3001 - 6504
- City Parks
- City Limits

Mile
0 ¼ ½ 1

Map Date: July 2021
Source: Coeur D'Alene, 2019.
Prepared by Kittelson & Associates, Inc
Volume Data Source: Kootenai MPO
Year 2040 Travel Demand Model

*Volume shown are taken directly from the travel demand model and are meant to only illustrate general order of magnitude of future demand and should not be taken as an absolute projection.

TRAFFIC OPERATIONS

The project team reviewed projected traffic operations for each scenario using the KMPO travel demand model. The model estimates volume to capacity (v/c) ratios for each segment in the peak direction during the peak hour. Figure 10 shows approximate level of congestion for each scenario by summarizing the miles of roadway within each scenario that are projected to be at or near capacity (i.e., v/c ratio greater than or equal to 0.90) and that are approaching this level (i.e., v/c ratio of 0.70 or greater). The numbers shown in the figure are meant to be general estimates of relative potential congestion and should not be taken as absolute projections.

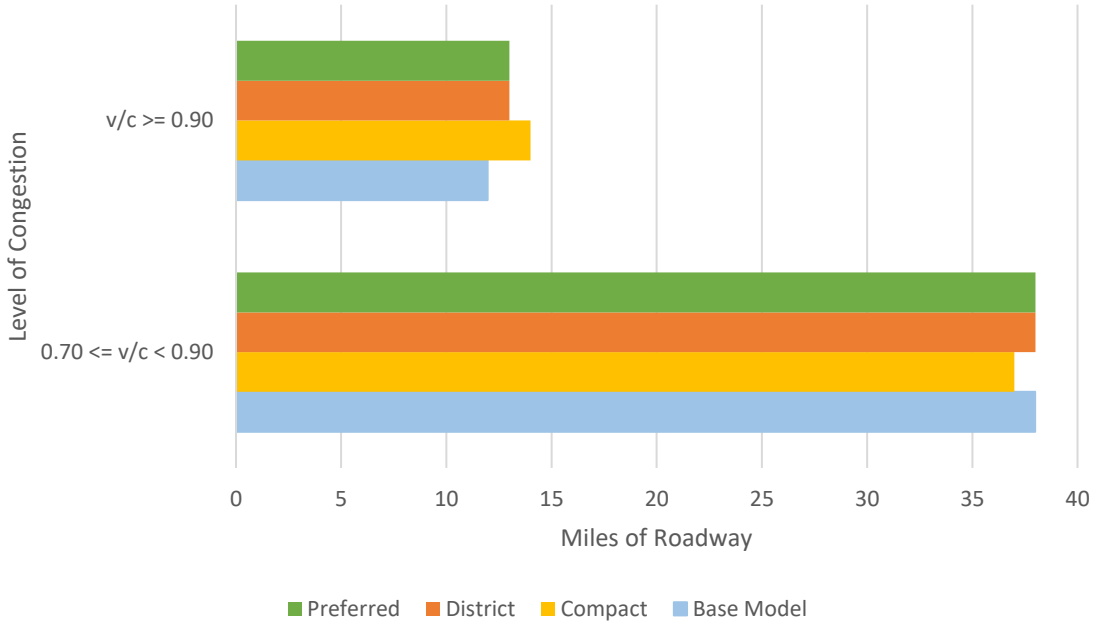

Figure 10 – Projected 2040 Miles of Roadway at/near Capacity within Coeur d'Alene ACI per Land-use Scenario

All scenarios generally have similar mileage in these two categories. The Compact scenario has about one mile of roadway more in the highest category, but about one mile less in the lower category. Overall, the Base 2040 scenario has about one mile less across both categories than the other scenarios.

Figures 11-14 show the projected v/c ratios for each scenario as determined in the KMPO travel demand model. The v/c ratios shown in the figures represent the peak direction of each segment. The figures provided generally illustrate areas of potential future congestion and should not be taken as absolute projections.

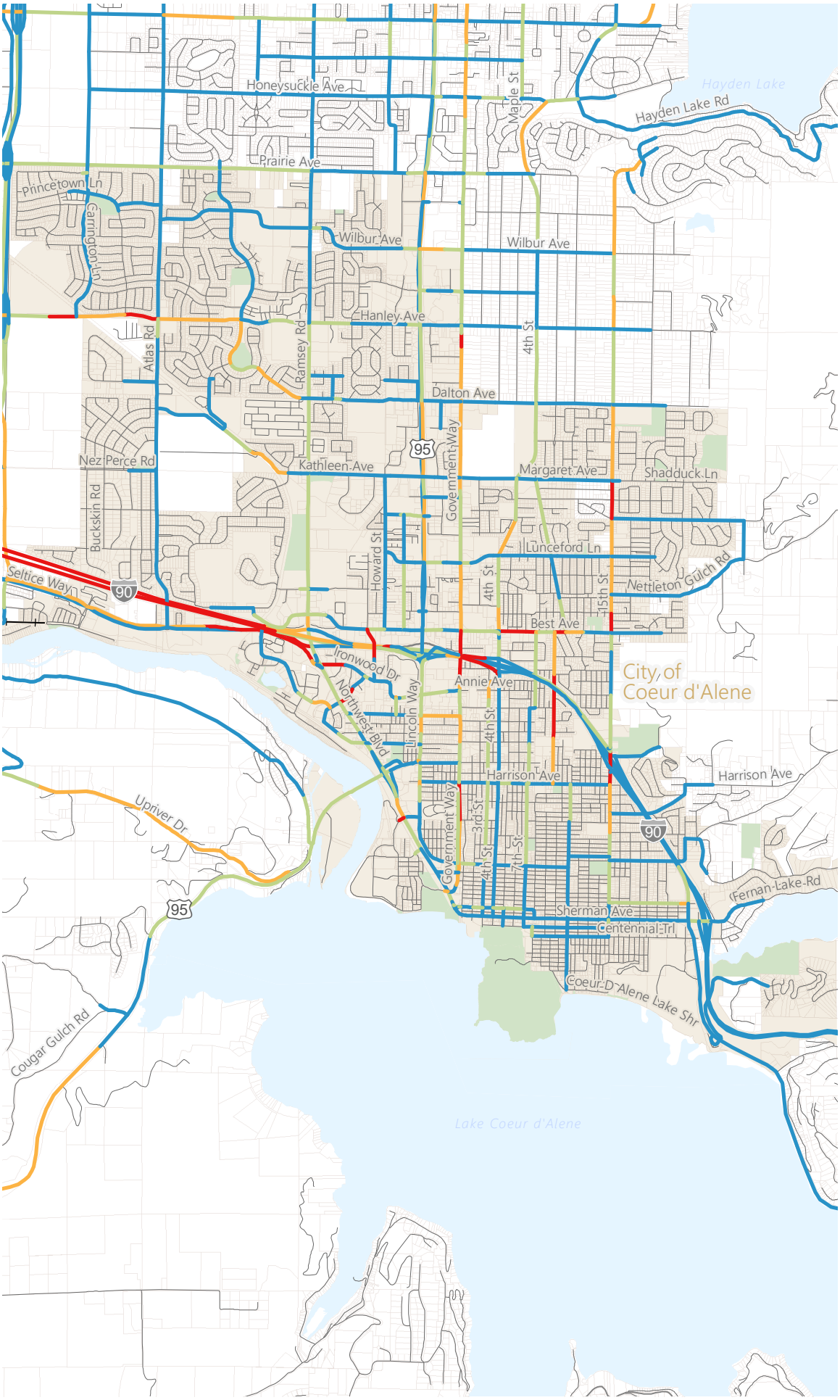

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Figure 11

2040 PM Peak Hour Traffic Operations Base Model Scenario

Peak Direction V/C Ratio

- >=0.90
- 0.70 - 0.90
- 0.50 - 0.70
- <0.50
- City Parks
- City Limits

0 ¼ ½ 1 Mile

Map Date: July 2021
Source: Coeur D'Alene, 2019.
Prepared by Kittelson & Associates, Inc
Volume Data Source: Kootenai MPO
Year 2040 Travel Demand Model

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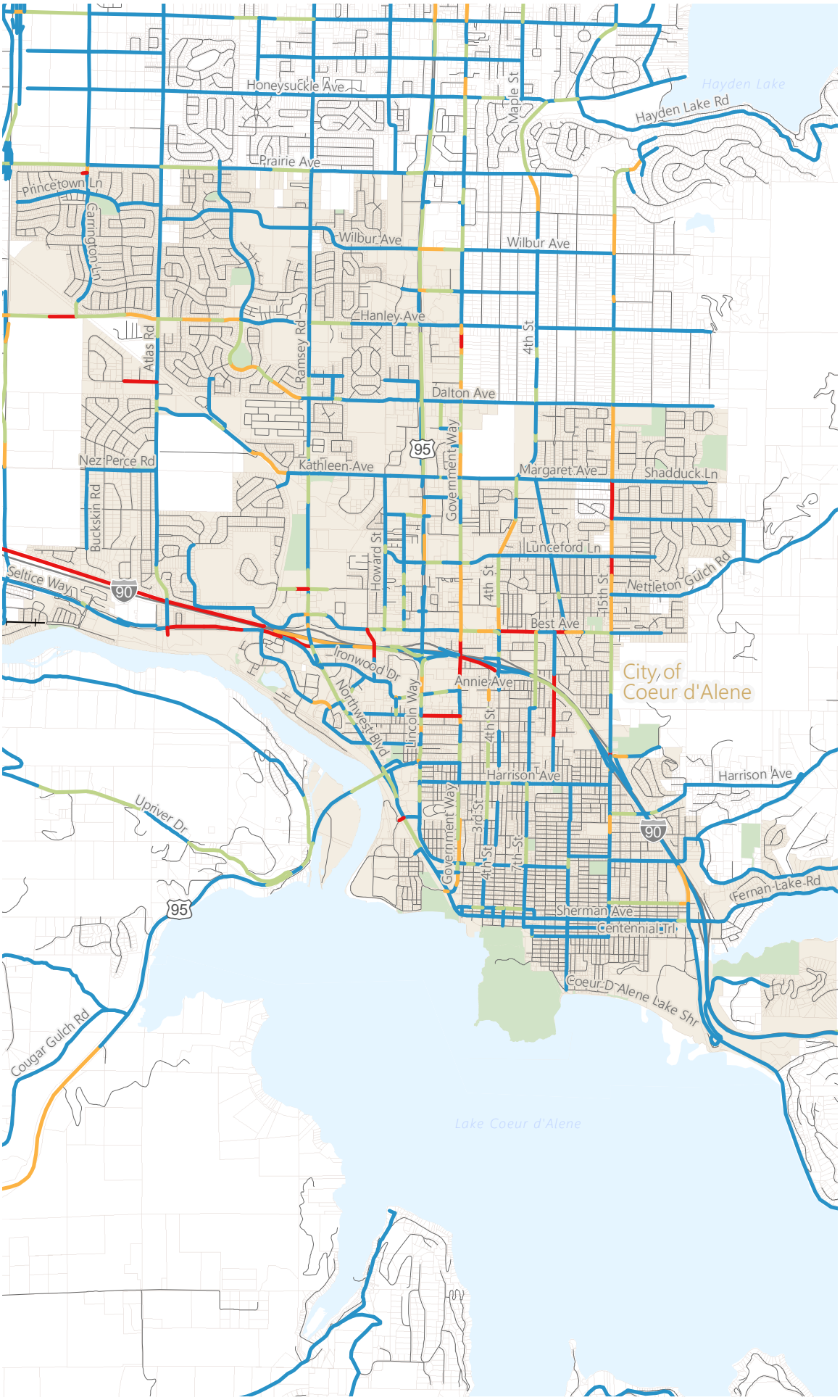

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Figure 12

2040 PM Peak Hour Traffic Operations Compact Model Scenario

Peak Direction V/C Ratio

- >=0.90
- 0.70 - 0.89
- 0.50 - 0.69
- <0.50
- City Parks
- City Limits

0 ¼ ½ 1 Mile

Map Date: July 2021
Source: Coeur D'Alene, 2019.
Prepared by Kittelson & Associates, Inc
Volume Data Source: Kootenai MPO
Year 2040 Travel Demand Model

*The figures provided generally illustrate areas of potential future congestion and should not be taken as absolute projections.

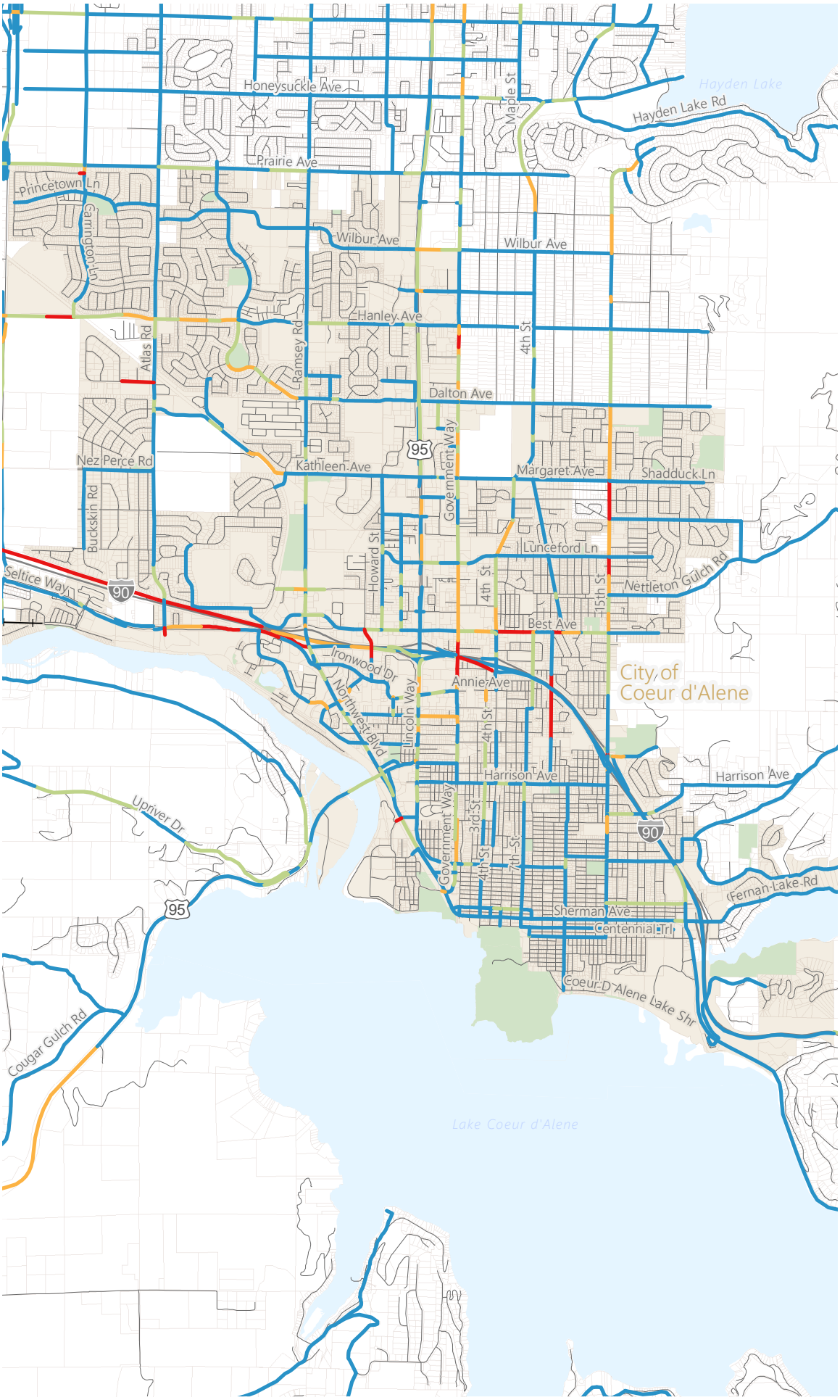

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Figure 13

2040 PM Peak Hour Traffic Operations District Model Scenario

Peak Direction V/C Ratio

- >=0.90
- 0.70 - 0.89
- 0.50 - 0.69
- <0.50
- City Parks
- City Limits

Mile
0 ¼ ½ 1

Map Date: July 2021
Source: Coeur D'Alene, 2019.
Prepared by Kittelson & Associates, Inc
Volume Data Source: Kootenai MPO
Year 2040 Travel Demand Model

*The figures provided generally illustrate areas of potential future congestion and should not be taken as absolute projections.

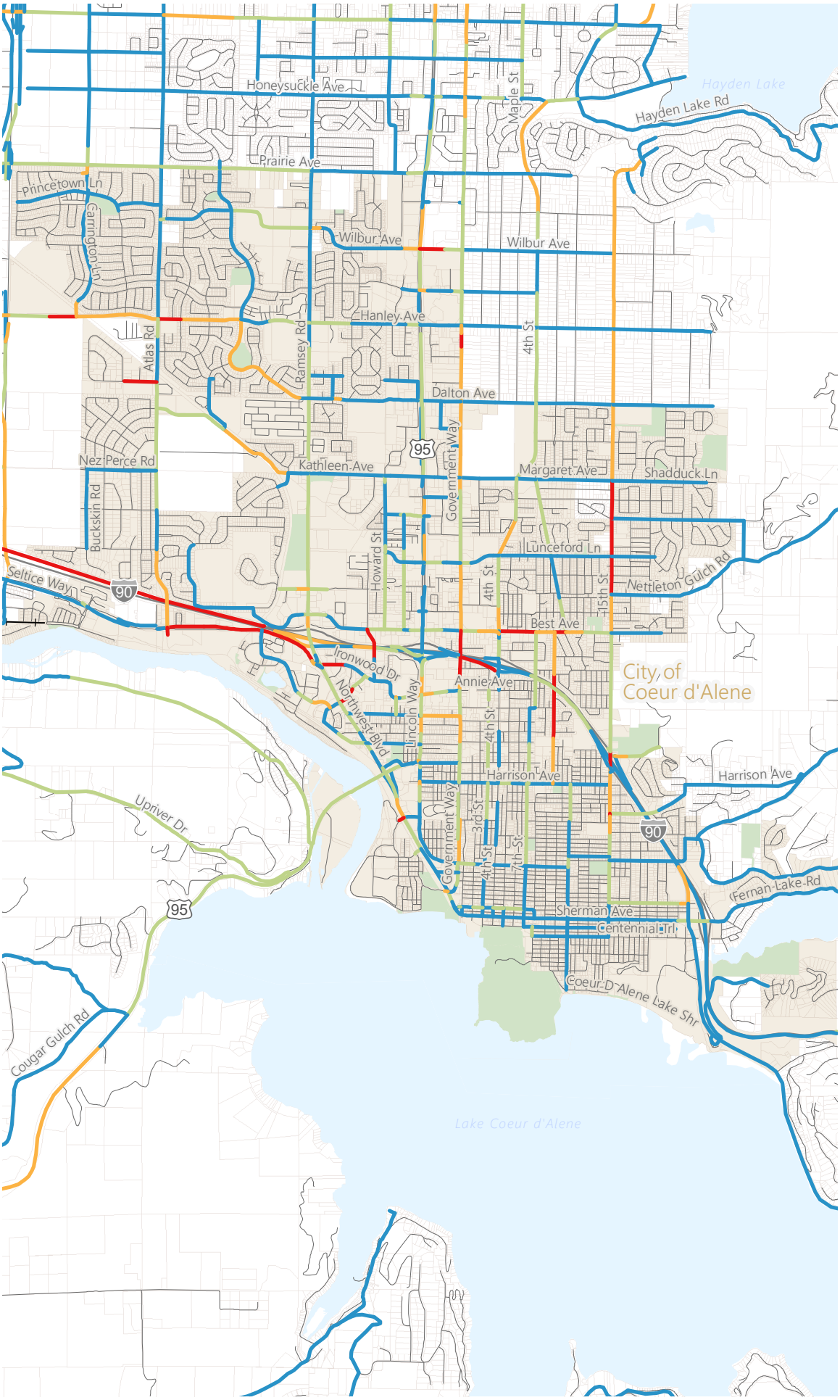

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Figure 14

2040 PM Peak Hour Traffic Operations Final Preferred Model Scenario

Peak Direction V/C Ratio
- >=0.90
- 0.70 - 0.89
- 0.50 - 0.69
- < 0.50
- City Parks
- City Limits

0 ¼ ½ 1 Mile

Map Date: July 2021
Source: Coeur D'Alene, 2019.
Prepared by Kittelson & Associates, Inc
Volume Data Source: Kootenai MPO
Year 2040 Travel Demand Model

*The figures provided generally illustrate areas of potential future congestion and should not be taken as absolute projections.

All scenarios show similar operations across the city, with slight differences between them. They show potential congestion in the following areas:

- I-90 in the west and central portions of the city
- 15th Street between Best Avenue and Margaret Avenue
- Government Way in the central portion of the city
- Hanley Avenue west of Ramsey Road
- Seltice Way near Northwest Boulevard
- 9th Street between Best Avenue and Harrison Avenue

Additionally, the Compact scenario shows some potential congestion in the southern portion of Government Way. When compared to the District and Compact scenarios, the Final Preferred scenario shows more congested segments in the northern residential areas of the city around the US 95 commercial corridor.

COMPATIBILITY WITH PLANNED AND EXISTING TRANSPORTATION INFRASTRUCTURE

This section evaluates the scenarios with respect to existing multimodal transportation infrastructure and adopted regional plans.

The areas planned for additional development in the land-use scenarios generally align with areas where investment is expected in transportation projects in the *KMPO Metropolitan Transportation Plan 2020-2040* (Kootenai Metropolitan Planning Organization, May 2020). Major projects from the plan include the Huetter Bypass project running north-south where the existing Huetter Road is on the west side of the city; the widening of several roads (i.e., Ironwood Drive, Atlas Road, 15th Street, Kathleen Avenue, Dalton Avenue, Fernan Hill Road, Hazel Avenue and US 95 south of I-90 across the Spokane River); expanding I-90 to three lanes in each direction from Sherman Avenue west to the Washington state line; revitalization of Sherman Avenue; the reconstruction of the US 95/I-90 interchange; adding an overpass of I-90 at Julia Street; and access management and turn-restrictions at multiple intersections along US 95. As noted in the previous section, there is still expected to be areas of congestion, even with these investments.

Planned bicycle projects from the *Regional Non-Motorized Transportation Plan* (Kootenai Metropolitan Planning Organization, July 2018) provide improved connectivity to the major areas of development across all scenarios. Bike lanes along Atlas Road and the western part of Hanley Avenue will provide needed connections from the residential areas in the west to development along US 95 and the downtown area. Multiple east-west connections are planned between US 95 and Government Way, which will improve access between the planned developments on the two corridors. The planned bicycle network additions along Huetter Road will provide further connectivity for the planned development in the northwest area of the city. To achieve the greatest benefit, all new bicycle facilities should be designed to accommodate a wide range of users, which may include providing buffered or separated facilities along arterial roads.

The existing and planned pedestrian network is well connected in the downtown region where it follows a grid pattern, as well as in the newer residential subdivisions in the northwest part of the city. There are no pedestrian facilities crossing I-90 for pedestrians traveling north-south along US 95. This is an important

connection for all scenarios, but especially District where there is planned employment centers to the south of I-90 and mixed-use/commercial corridor development to the north.

The existing transit network covers most of the planned development areas across the scenarios. Routes travel along Seltice way, Lincoln Way (South of I-90), and 4th Street (South of I-90) to serve both the downtown area and connections from the northern region of the city to downtown. However, there is no transit connections to the planned development to the northeast along Huetter Road. There would also be limited connectivity to the planned employment centers in the northeast and southwest portions of the city across the three scenarios.

Overall, the mixed-use nature of the scenarios has the potential to provide for improved walking and biking opportunities between residential and commercial destinations. The Compact and Final Preferred scenario's location of employment centers near established neighborhoods may also provide increased multimodal travel opportunities. As noted previously, these scenarios generally result in fewer miles traveled per dwelling unit or job as compared to the 2040 Base scenario.

Conclusion

The key takeaways from this transportation evaluation are:

- The Compact, District, and Final Preferred scenarios are more efficient than the 2040 Base scenario.
- The levels of congestion are generally commensurate with the levels of travel.
- All scenarios offer opportunities for multimodal travel due to the increase in mixed-use development and the concentration of development near existing neighborhoods.
- All scenarios include development in newer portions of the city where travel on higher speed arterial roads will be necessary. It will be important to build out bicycle infrastructure that is appealing to a wide range of users, including separated and buffered facilities, in order to make bicycling a viable mode of travel in these areas.