

**GRANT COUNTY NOTICE TO CONSULTANTS FOR:  
Traffic Study Peer Review**

Grant County Public Works solicits interest from consulting firms with expertise in Traffic Engineering. This agreement will be for approximately 2 months in duration with the option for Grant County to extend it for additional time and money if necessary. Consultants will be considered for the following project.

Grant County reserves the right to amend terms of this "Request for Qualifications" (RFQ) to circulate various addenda, or to withdraw the RFQ at any time, regardless of how much time and effort consultants have spent on their responses.

**PROJECT DESCRIPTION:**

The work to be performed by the CONSULTANT consists of peer review of a traffic study and mitigation required for a Planned Unit Development and Binding Site Plan. The project site is The Gorge Amphitheater, located at the intersection of Road 1-NW and Silica Road NW in Grant County, WA. A copy of the March 2014 Gorge Amphitheater & Campground Traffic Study and 2015 update letter can be found at <http://www.grantcountywa.gov/GCPW>. The review shall consist of providing Grant County Public Works a determination based on the traffic study, which of the listed mitigation improvements are warranted for the proposed Planned Unit Development & Binding Site Plan and when any of the improvements would be required to be constructed.

**EVALUATION CRITERIA:**

Submittals will be evaluated and ranked based on the following criteria:

- Office in Washington State and proximity to Grant County
- Experience with Local Agencies/Focus on Local Agencies
- Qualifications/Expertise of Firm
- Proven ability to stay within budget
- Approach to project
- Ability to meet schedule

**SUBMITTAL:**

Submittals should include the following information: Firm name, phone, fax and email addresses; Name of Principal-in-Charge and Project Manager; and Number of employees in each firm proposed to the project.

Please submit THREE (3) copies of your Statement of Qualifications to: Grant County Public Works, Jeff Tincher, P.E. Director, 124 Enterprise Street SE, Ephrata, WA 98823, (509) 754-6082 no later than 4:00 p.m. on July 21, 2017. Submittals will not be accepted after that time and date. Any questions regarding this project should be directed to the same.

**AMERICANS WITH DISABILITIES ACT (ADA) INFORMATION**

Grant County in accordance with Section 504 of the Rehabilitation Act (Section 504) and the Americans with Disabilities Act (ADA), commits to nondiscrimination on the basis of disability, in all of its programs and activities. This material can be prepared and supplied in an alternate form by calling 1-800-572-0119.

**TITLE VI STATEMENT**

Grant County in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 U.S.C. 2000d to 2000d-4 and Title 49, Code of Federal Regulations, Department of Transportation, subtitle A, Office of the Secretary, Part 21, nondiscrimination in federally assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises as defined at 49 CFR Part 26 will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, national origin or sex in consideration for an award."



# THE GORGE AMPHITHEATER & CAMPGROUND TRAFFIC STUDY

*GRANT COUNTY, WA*



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# THE GORGE AMPHITHEATER & CAMPGROUND TRAFFIC CONTROL PLAN AND STUDY

## TABLE OF CONTENTS

I.	Introduction .....	3
II.	Concert Demographics .....	4
III.	Trip Generation .....	6
IV.	Vehicle Travel Patterns .....	10
V.	Amphitheater Operations .....	18
VI.	Campground Operations.....	19
VII.	Emergency Routes.....	20
VIII.	Directional Signage .....	22
IX.	Adaptive Management.....	22
X.	List of Potential Improvements .....	22

## LIST OF FIGURES

1.	Roadway System.....	5
2.	Trip Distribution .....	7
3.	Western Travel Route .....	11
4.	Northern Travel Routes.....	13
5.	Eastern Travel Routes .....	14
6.	Emergency Route.....	21

## THE GORGE AMPHITHEATER AND CAMPGROUND TRAFFIC CONTROL PLAN AND STUDY

### *I. INTRODUCTION*

The Amphitheater at George, Washington has been one of the most popular outdoor concert venues in the nation for over three decades. The amphitheater provides a spectacular venue overlooking the Columbia Gorge for musical concerts and popular entertainment. Originally a working vineyard, today thousands of music lovers from all over the Northwest and beyond descend upon this unique site each weekend during the spring and summer months to see world-renowned artists perform. The concert season begins in May and runs through September.

In addition to the spectacular scenery overlooking the Columbia River Gorge, the temperate Eastern Washington climate - mean annual summer time temperature of 70 to 80 degrees and annual rainfall of 10 inches or less - creates a destination experience for concertgoers who travel to the amphitheater to spend the entire weekend there, listening to music and camping in adjacent campgrounds on the site. Families and young people return again and again each year to this popular venue, assured that they will enjoy premier entertainment in good weather at a beautiful location – all at an affordable price.

As its popularity grew, venue operators kept pace with the demand, steadily improving the facility with better seating, lighting, increased sanitation facilities and expanded foodservice. Because of this orientation toward providing a top-notch, unique experience for concert goers, amphitheater attendance currently averages 19,000 per event, including approximately eight to ten sold out shows each season and sold out shows on consecutive days. The maximum attendance at a standard single concert is 22,000; maximum attendance for multi-day festivals is 27,500.

Most concertgoers attending weekend events at the Gorge stay at the campground located just north of the amphitheater. The campground property, owned by the Hanson family until 1999, is now operated by Live Nation. Ancillary buildings providing sanitation, food service and operations have also been constructed here for use during the concert season. The campground area serves a dual

purpose. During the off season and between concerts, it is operated as part of a working farm, including a large overhead irrigation circle. The irrigation equipment is moved off site while camping takes place, but operates mid-week between concert dates for grass growing purposes.

Figure 1 illustrates the overall roadway network currently serving the amphitheater site. More detailed site plan information illustrating both the amphitheater and the campground layout is attached to the appendix on Sheets 1 through 7 of the drawings prepared by HLA. Proposed new and expanded elements of the amphitheater and campground are added to the appendix.

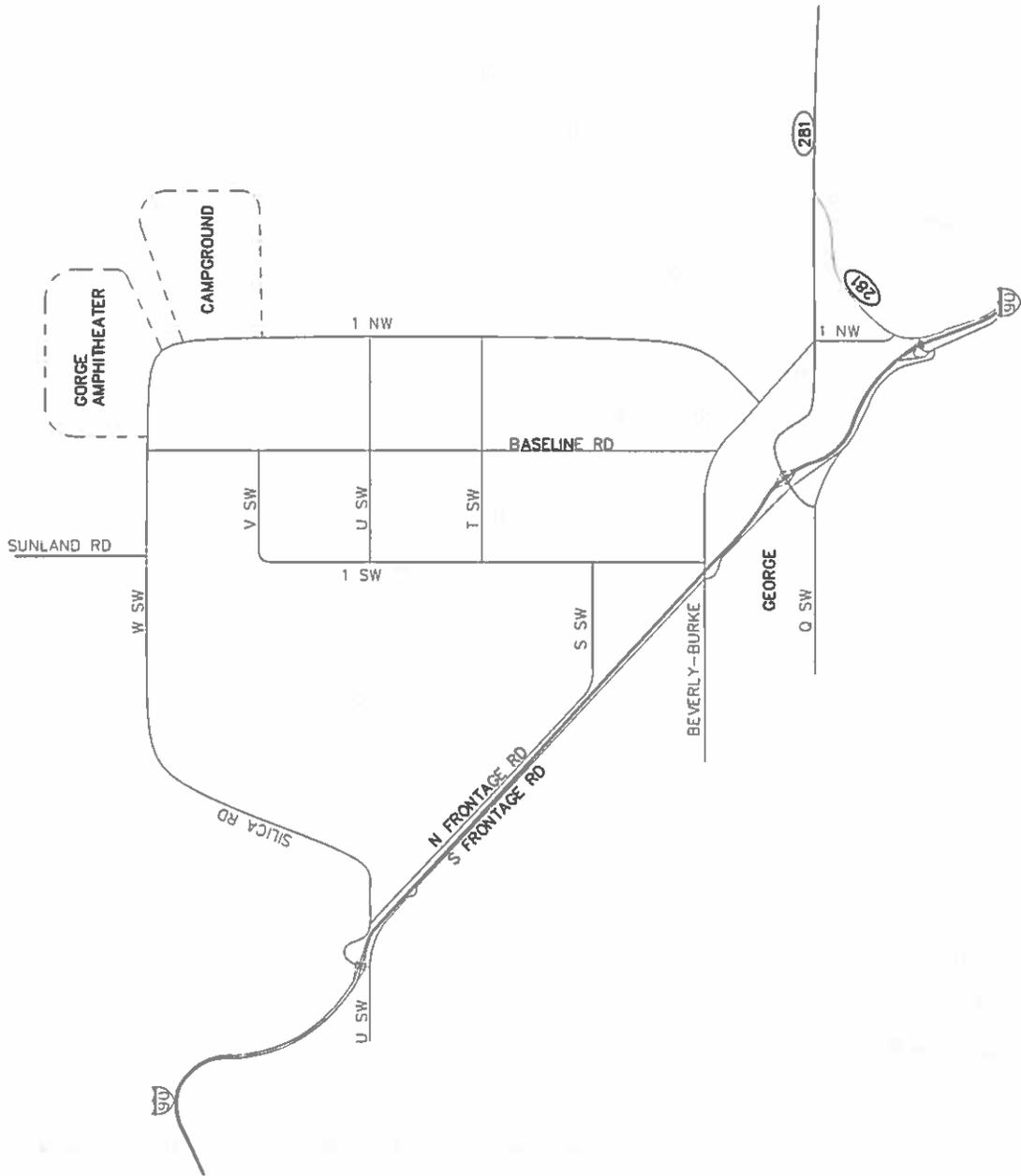
Many of the planned construction projects seek to improve the experience for all amphitheater stakeholders including patrons, entertainers, and amphitheater employees.

Under the proposed Master Plan, increased traffic to the site is anticipated primarily by increasing the number of patrons who can be adequately served at the venue. However, a number of projects incorporated into the Master Plan could actually reduce traffic by lessening the need for outside travel as more services and amenities are offered on or near the site. Examples of this include the addition of retail and a farmer's market, increased recreation options and better medical facilities. Some projects such as the outdoor cinema and café/bar could also add to the concert experience or be destinations during non-concert or peak times.

## *II. CONCERT DEMOGRAPHICS*

The amphitheater draws concert patrons from a market area comprising the entire state of Washington, .. adjacent states, and from the Canadian provinces of British Columbia and Alberta. Located in Grant County, where agriculture is the dominant industry, the area surrounding the amphitheater is sparsely populated . Therefore, the typical concert patron coming from outside the area . would be considered unfamiliar with the roadway layouts and directional elements meant to guide them. Very little travel activity occurs on or near the site during the off-season.

Ticket sale records indicate that approximately 65 percent of the attendees travel from the west, primarily via the I-90 corridor and that the remaining 35 percent travel from the east and north using I-90 and SR-281, 25 percent traveling from the direction of Spokane and 10 percent from the



direction of Wenatchee. Attendance at concerts varies but a review of previous events indicates that paid attendance ranges from 6,000 up to 22,000 for sold-out one day concerts and 27,500 for multi-day festivals. At the close of each season, Live Nation reviews patron traffic distribution in order to better understand the markets and any changes that might be occurring in the client base.

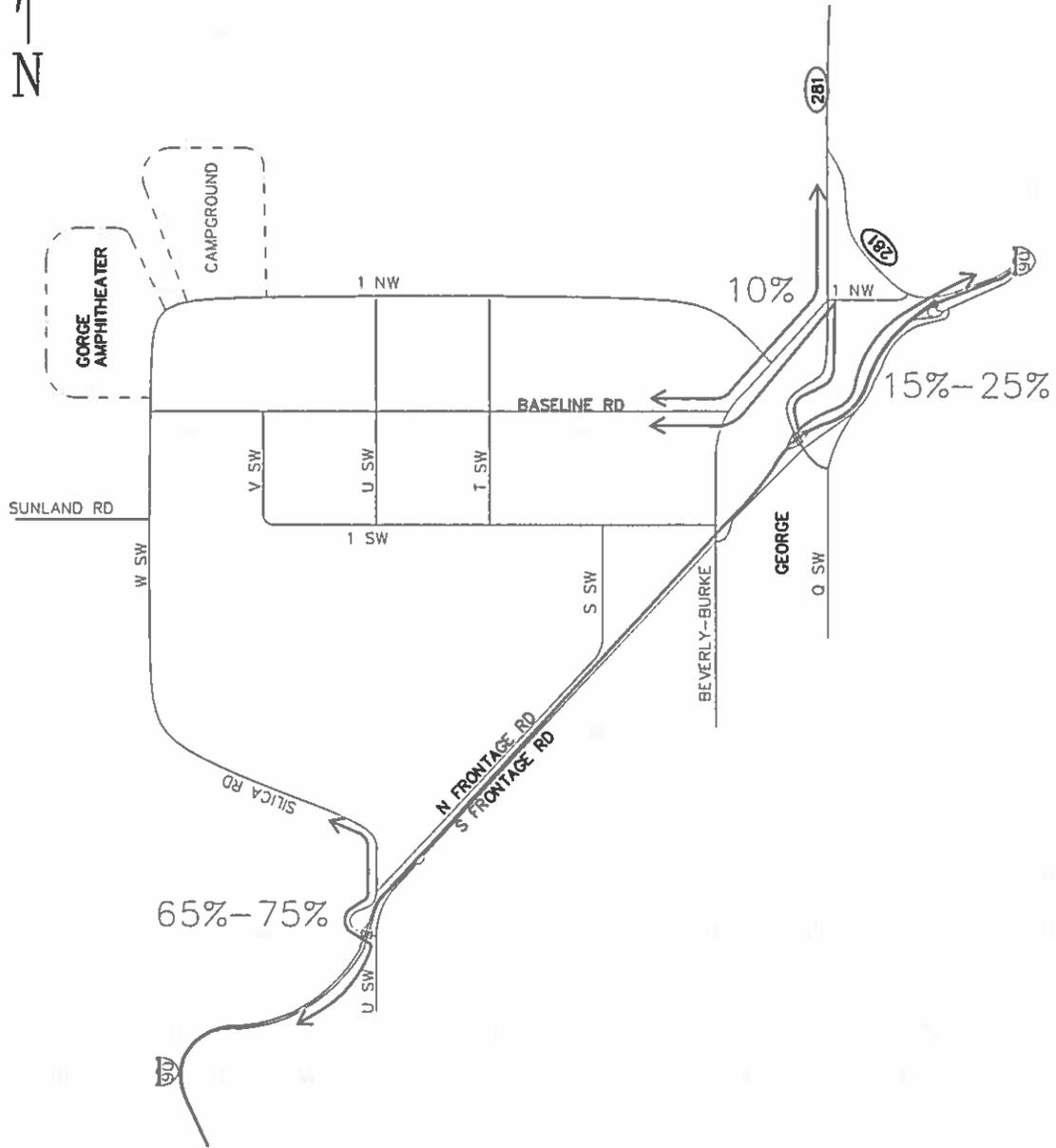
Arrival/departure time of concert attendees varies depending on the type of show offered. Some shows, such as the multi-day Sasquatch, draw a larger percentage of attendees, upwards of 90 percent who want to stay at the campground. A more typical show, such as The Zac Brown Band, involve 40 percent campground usage. On the lower end of the range, some shows result in approximately 25 percent of the attendees staying at the campground.

Traffic distribution for previous concerts is established by reviewing count data at the primary entry points, I-90 at the Silica ramps, I-90 at the George ramps and SR-281. The percentage distribution for concerts, generally, is estimated to be 74 percent from the west, 16 percent from the east, and 10 percent from the north. It should be noted that distribution will vary from concert to concert. The probable range is 65 to 75 percent from the west, 15 to 25 percent from the east, and 5 to 10 percent from the north.

### *III. TRIP GENERATION*

Amphitheater operations personnel indicate that the occupancy per vehicle ranges from 2.3 to 3.8 persons with an average of 2.85 persons per vehicle. Occupancy per vehicle in the campground is estimated at 3.8 persons per vehicle.

Live Nation has promoted higher vehicle occupancy rates through marketing efforts recommending carpooling. Along with higher gasoline prices, this has led to an increase in vehicle occupancy at most concerts. The Master Plan establishes an ample area on site which is large enough to accommodate all parking needs and expansion of the campground, as well as providing increased efficiency in the camping intake process.



The information below looks at total concert and campground vehicle parking for several scenarios based on the proposed traffic increase as incorporated in the master plan. The parking analysis translates into trip generation as each car arrives and then departs. Several assumptions are made based on the fact that the type of concert determines trip generation, *i.e.*, the percentage of patrons camping overnight versus those coming to the site for the show only.

#### Existing Trip Generation

1. 27,500 festival attendees with 90 percent camping at 3.8 persons per vehicle and 2.8 persons per vehicle for daily patrons yields approximately 6500 overnight vehicles and 1000 day use vehicles for a total of 7500 vehicles.
2. 22,000 single concert attendees with 25 percent camping at 3.8 persons per vehicle and 75 percent day use attendees at 2.8 persons per vehicle yields approximately 1450 overnight vehicles and 5900 day use vehicles for a total of 7350 vehicles.

#### Phase I - 1 to 4 years Trip Generation

Phase I contemplates an increase in maximum attendance of 29,000 attendees for festivals and 23,500 for single day concerts.

1. 29,000 festival attendees with 90 percent camping at 3.8 persons per vehicle and 2.8 persons for daily patrons yields approximately 6900 overnight vehicles and 1050 daily vehicles for a total of 7950 vehicles.
2. 23,500 single concert attendees with 25 percent camping at 3.8 persons per vehicle and 75 percent daily attendees at 2.8 persons per vehicle yields approximately 1550 overnight vehicles and 6300 daily vehicles for a total of 7850 vehicles.

## Phase II - 5 to 9 years Trip Generation

Phase II contemplates an increase in maximum attendance to 32,000 attendees for festivals and 25,000 for single day concerts.

1. 32,000 festival attendees with 90 percent camping at 3.8 persons per vehicle and 2.8 persons per vehicle for daily patrons yields approximately 7600 overnight vehicles and 1150 daily vehicles for a total of 8750 vehicles.
2. 25,000 single concert attendees with 25 percent camping at 3.8 persons per vehicle and 75 percent daily attendees at 2.8 persons per vehicle yields approximately 1650 overnight vehicles and 6700 daily vehicles for a total of 8350 vehicles.

## Phase III - 10 to 20 years Trip Generation

Phase III contemplates an increase in maximum attendance to 35,000 attendees for festivals. Single day's concert attendees would remain at 25,000.

1. 35,000 festival attendees with 90 percent camping at 3.8 persons per vehicle and 2.8 persons per vehicle for daily patrons yields approximately 8300 overnight vehicles and 1250 daily vehicles for a total of 9550 vehicles.
2. No change in single concert attendance, *i.e.*, 25,000 attendees and 8350 vehicles.

Arrival times are variable. A 7:00 PM Saturday show will generally see a build-up in traffic starting at 1:00 PM to 2PM with inbound volumes peaking at approximately 4:00 PM to 5 PM. Friday shows normally start at 8:00 PM and have a slightly later arrival peak. The high number of daylight hours during the concert season benefit the driver in their travel to the site.

Under the Master Plan, access to the campground is changed by a traffic flow modification lengthening the inbound process and delaying the outbound process. Inbound concert traffic to the campground generally arrives earlier, providing campers time to set up and arrange their campsites. Although some overlap occurs during the inbound process between campground patrons and single day attendees, much of the campground traffic arrives before the bulk of the concert only traffic. Moreover, on all but the first day of a multi-day concert, there is very little in-bound campground

traffic. Almost all traffic thereafter is day use only traffic. Immediately after a show, there is very little vehicle traffic associated with the campground; the majority of the traffic associated with the campground is pedestrian traffic as attendees walk from the show to the campground area. This allows much of the concert only vehicle traffic to leave before the bulk of the campground traffic departs. In fact, during a multi-day concert, on all but the last day, departure vehicles are almost exclusively the day use vehicles.

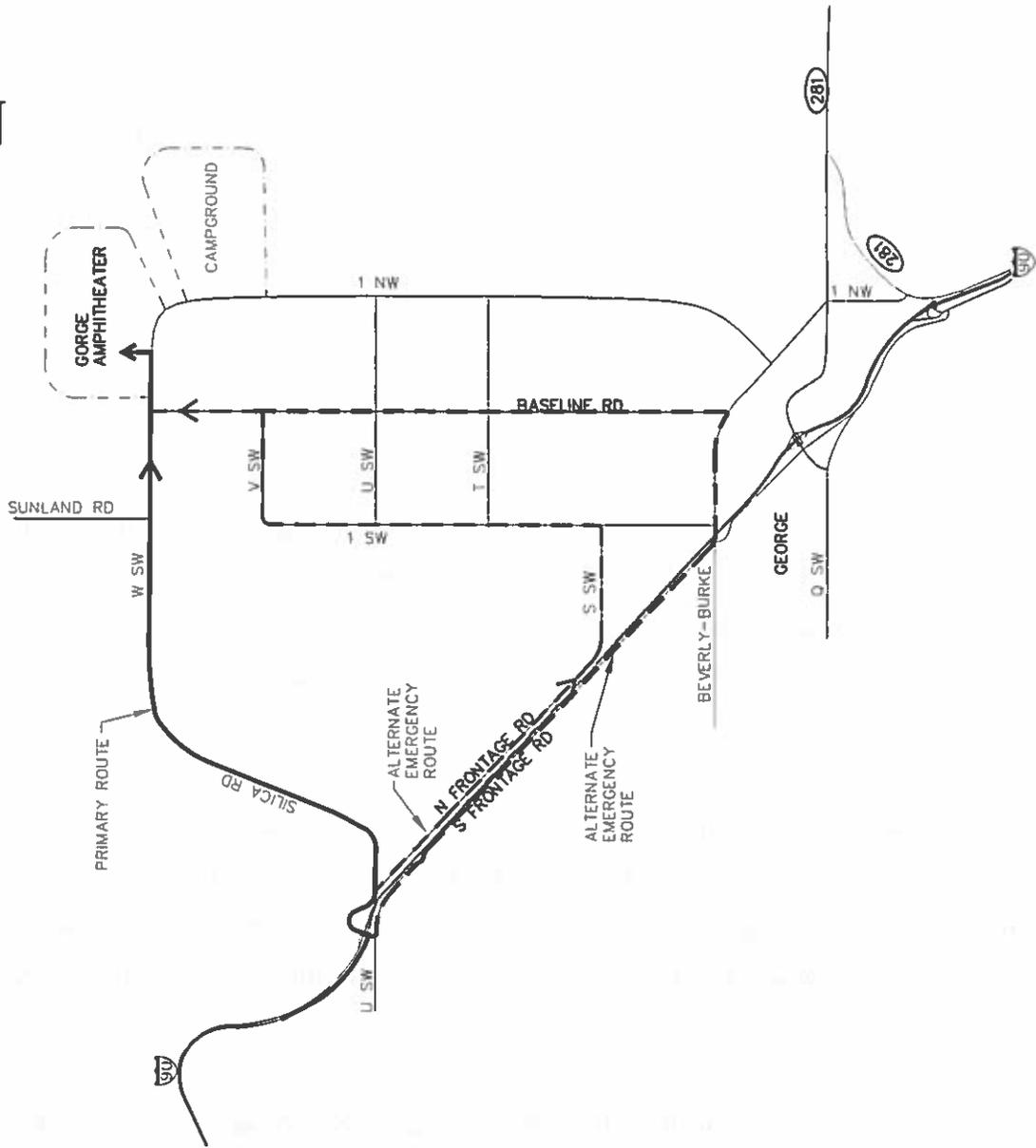
After a concert, a small percentage of concert goers drive from the amphitheater to the campground to camp or to deliver belongings. This type of traffic is estimated to involve 100 to 300 vehicles. The proposed Master Plan improvements to the pedestrian connection between the campground and the amphitheater will decrease these vehicle trips as well as provide the added benefit of eliminating the pedestrian/vehicle conflict at Gate C Road.

#### *IV. VEHICLE TRAVEL PATTERNS*

##### *A. Western Travel Routes*

Inbound travelers from the west typically use the Silica Ramp because the I-90 directional signs direct traffic to that exit. At the off-ramp intersection with Silica, guide signs direct amphitheater traffic to the west via a left turn at Silica Road, then direct traffic all the way to the Amphitheater entrance. Intermittent signs along the route reaffirm to drivers that they are traveling on the correct route. Silica Road is a recently built roadway that provides a much more direct route to the amphitheater compared to the original North Frontage Road route. Silica Road has a good geometric design, both from a horizontal and vertical standpoint, allowing traffic to travel safely at higher speeds. Its asphalt and oil mat surfacing is in good condition. The lanes are mostly 12-foot minimum lanes with shoulders along its length. Areas near the amphitheater have been re-striped to provide additional 10-foot wide lanes. Outbound traffic flows out in the reverse, traveling back southerly along Silica to the Silica Road/I-90 interchange.

Backup routes for travelers coming from the west include the North Frontage Road and the South Frontage Road with the North Frontage Road providing primary backup. These routes are used if Silica Road is closed due to an accident or other incident or if it is overloaded. These routes are not as straightforward to the attendee and require increased personnel and auxiliary signage to direct concert patrons to the amphitheater site. Figure 3 illustrates the travel routes and backup routes for the 65 to 75 percent of the traffic to and from the west.



## B. Northern Travel Routes

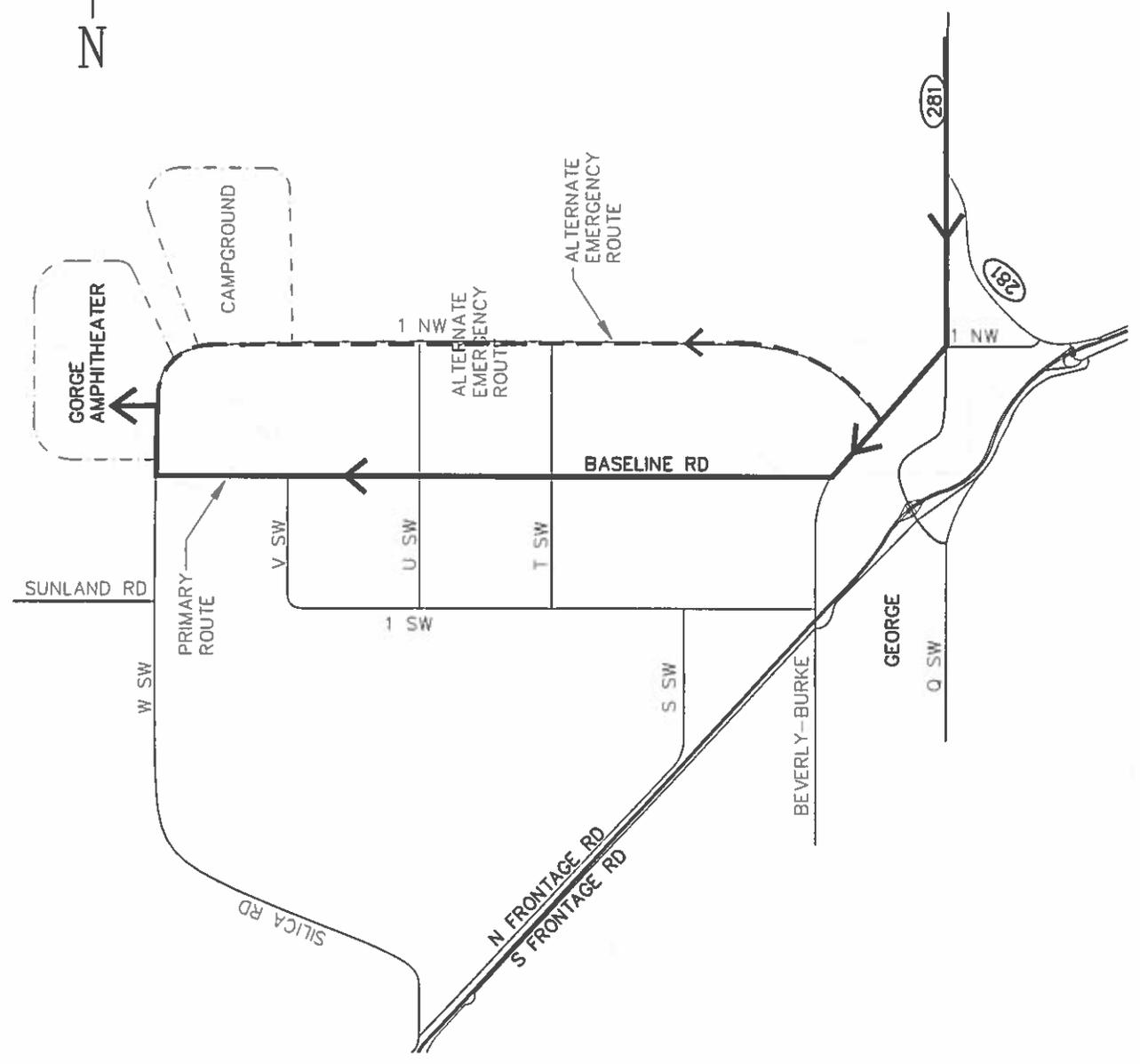
Travelers to and from the north utilize the SR-281 route which provides access for concert patrons from the Wenatchee area. An estimated 5 to 10 percent of the attendees originate from this direction. Closer to the amphitheater site, traffic from the SR-281 route used by attendees from the north combines with traffic from the east. Figure 4 identifies the route used by the northern based traffic.

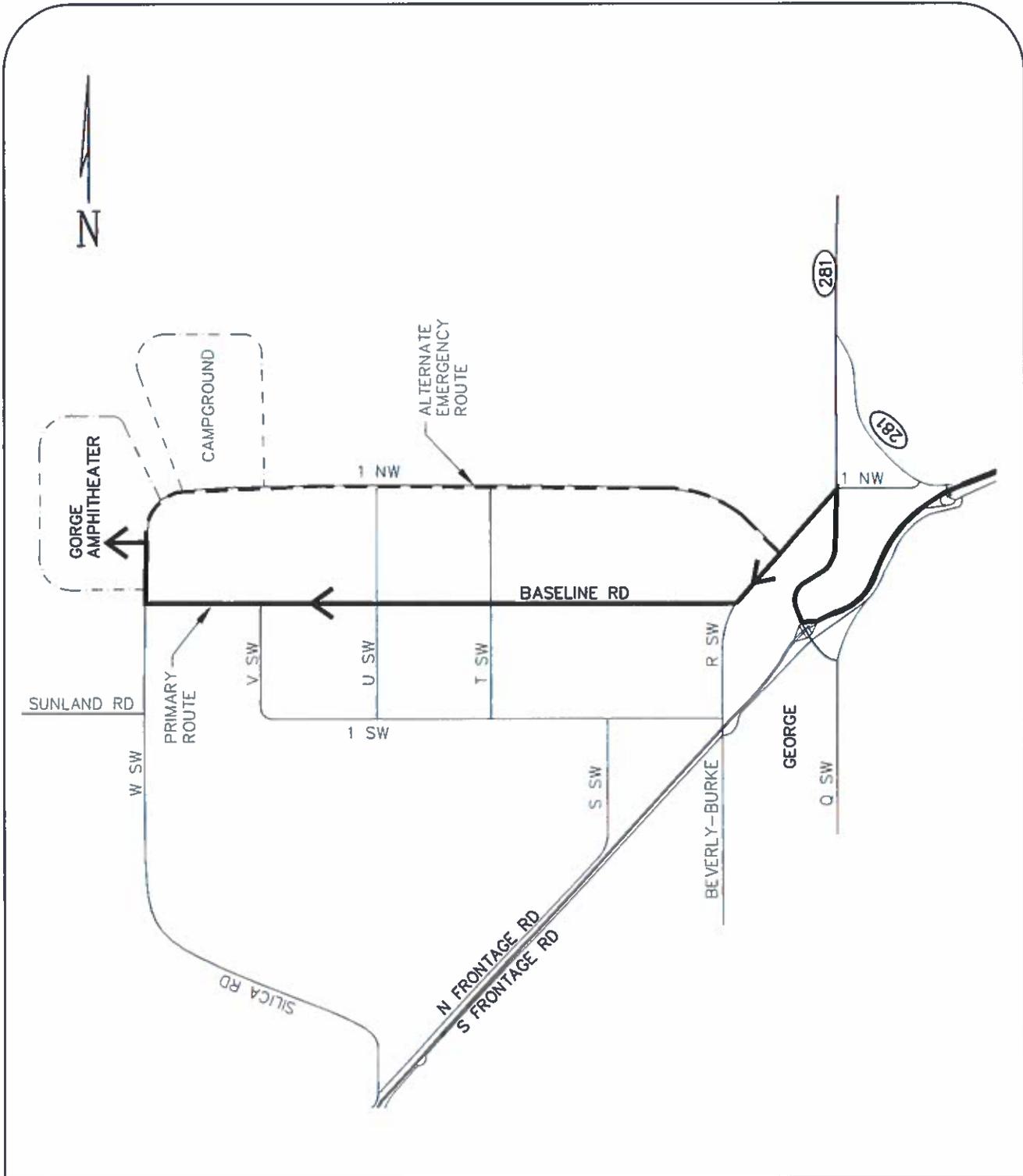
## C. Eastern Travel Routes

Travelers to and from the east exit I-90 at the George interchange and head northerly on SR-281 to the intersection of Beverly-Burke Road where they turn left toward Baseline Road. They then turn right onto Baseline Road for the five-mile drive toward the amphitheater. At the intersection of Baseline and Silica Road, this eastern based amphitheater traffic merges with the western based traffic where field personnel direct traffic into the amphitheater parking areas or toward the campground.

Outbound traffic is directed from the amphitheater to Baseline Road and then allowed to split - northern traffic turning left onto SR-281, eastbound traffic turning right and then re-directed back toward the George interchange. Based on marketing information, an estimated 15 to 25 percent of amphitheater traffic is to and from the east. Figure 5 identifies the travel routes for the eastern traffic.

Ancillary routes for traffic coming from the north and the east are 1-NW and 1-SW, should Baseline be encumbered. The cross-streets, U-SW primarily and T-SW secondarily, provide interconnection between these three east-west streets.





#### D. Level of Service Analysis

Level of Service (LOS) analysis for roadway segments is a feature of roadway analysis that augments the more prevalent analysis of intersection LOS. While intersection LOS determines the need for intersection improvements, such as turn lanes and signals, LOS analysis of the segments can help determine the number of through lanes needed to carry . required traffic.

Segment LOS analysis is a useful tool when analyzing congestion and to help assure that roadway improvements are not constructed which prove inadequate soon after opening. Level of service for roadway segments should be used with caution when analyzing roadways used for special events. Economics dictate that unused roadway capacity is expensive to build and to maintain. Building excess capacity is an inefficient use of scarce resources if it is utilized few days of the year. When, as here, traffic impacts occur on a very limited number of days each year, consideration should be given to traffic management options to facilitate flow, in lieu of costly infrastructure improvements.

Regarding roadways serving the amphitheater, the special event category would best describe the type of function for which they are used. A number of events are below amphitheater capacity, allowing the roadways to operate with more moderate assistance from field personnel and law enforcement. Larger events require more intense roadway management and a coordinated response between Live Nation and law enforcement agencies. In either case, the number of event days annually – approximately 20 days per year - is nominal.

The following analysis reviews a typical event. The inbound (load-in) portion is more critical than the outbound movement for several reasons.

1. Inbound traffic converges toward the site while outbound movement is diluting away from the site. Although outbound patrons want to get to their destination, there is more flexibility to their movement; they are not up against a hard deadline for the show's start.
2. The outbound time frame occurs during late evening/early morning, generally, with very little non-event traffic on the roadways.

3. Inbound movement contains campground-destined traffic and amphitheater-only traffic. After the event, the campground traffic is in the form of pedestrians moving from the amphitheater to the campground. Based on current campground operations, the traffic from the facility would not overlap with the day use traffic, but rather would leave the next day.

A 25,000 patron show generates approximately 8350 vehicles whereas a 35,000 person festival would generate an estimated 9550 vehicles. Traffic patterns would be in keeping with those identified above with 75 percent from the west, 15 percent from the east and 10 percent from the north. The split of attendees between campground traffic and amphitheater traffic is based on discussions with Live Nation and has been fairly stable over the years.

The 8350 inbound vehicles destined for both the amphitheater and the campground would not all arrive in the same hour. Based on data from 2000, for concerts with lower capacity, the maximum one hour volume generated was 1100 vehicles. This figure needs to be adjusted upwards to reflect a future 25,000 attendee capacity. That adjustment results in a maximum hourly inbound count of 1350 vehicles.

The volume on a two-lane roadway with the characteristics of Silica Road is found in the Highway Capacity Manual and is estimated at 1800 vehicles per hour per lane under ideal conditions, which is the prevalent roadway condition on Silica. Thus, there likely is adequate capacity on Silica Road for a concert with a 25,000 patron future capacity.

Given the above segment analysis roadway congestion would most likely occur at intersections, including the entry points to both the campground and the amphitheater. This congestion would occasionally create queuing on Silica Road and Baseline Road. Such queuing is routine and expected at any major spectator event held within the State of Washington. Information signage gives warning to the drivers traveling to the site that an activity is ahead coupled with the natural congestion that occurs as drivers get closer to the entrances.

Patrons using roads feeding traffic to major sporting events (15,000 + attendees), fairs or outdoor recreational destinations anywhere in Washington can always expect that the ideal design capacity and optimum service levels of feeder roads will be exceeded during peak periods before and after

large events. The only way to avoid exceeding service level capacities for roads serving major recreational facilities, such as the Gorge, is to construct dedicated feeder roads for the exclusive use of event patrons. This solution would be cost prohibitive under any rational and objective cost benefit analysis. Such exclusive roadways or lanes would be used by a only small segment of the population for a small percentage of the year. State and local road building authorities will always have higher priority projects than those that serve a limited portion of the public for a brief portion of the year since there is such a low return on investment of public road funds.

The same principles of cost-benefit analysis would hold true if the analysis were performed by a private entity. If roads or intersections specifically are expanded solely to meet the demands created by the amphitheater and campground patrons for less than 10 to 15 days per year (when Gorge events attract capacity crowds and traffic congestion results), it would be a waste of valuable traffic control resources and county road maintenance funds.

Past concert seasons have provided reliable evidence that other more effective investments can be made operationally to better manage and control traffic. The addition of festival type entertainment occurring over multiple days has spread the inbound and outbound traffic out lessening the intensity. Deployment of added ticket processing at the campground, more on-site vehicle queuing, better signage and expeditious traffic accident clearing and towing of stalled vehicles from Silica and Baseline Roads have improved traffic operations in the area, too. These measures to quicken the intake of campers have been effectuated at the campground and include better queuing and increased number of lanes. Included in the appendix is a schematic as to how this occurs at the campground entrance for larger events.

Even if capacity were added to inbound Silica road, traffic backups for the largest events would not be avoided. Backups would begin wherever the added capacity ends. Unless capacity was added all the way to I-90, the additional capacity on other, limited segments of roadway would have little effect on relieving backups.

Thus, the most cost effective solutions to Gorge traffic problems are planned management and on-site, holding area solutions specifically designed to get patrons' vehicles off area roads in the shortest period of time. That will most likely involve more rapid processing of vehicles as they enter Gorge

property either at the Amphitheater parking lot or the campground. This is where Live Nation focuses its planning effort and shows a measurable and cost effective return on its investment.

#### *V. AMPHITHEATER OPERATIONS*

Traffic is most concentrated as it approaches the intersection of Baseline and Silica. Traffic from all directions converges there and is guided to the amphitheater parking lots with campers siphoned off toward the campground lying to the north. The roadway in front of the Amphitheater has been widened to three lanes providing a higher number of exiting and entering lanes. Personnel, including Live Nation crowd management operators and Grant County law enforcement officers, control this area and provide detailed direction to drivers.

Free parking is available at the amphitheater, permitting parking activity unencumbered by exchanging money. Rapid inbound movement into the site as amphitheater personnel guide drivers to parking stalls can take place unimpeded. The loading process is more critical than the outbound process - drivers are converging on an area rather than exiting, a more drawn out, dilutive process. The loading process operates smoothly much of the time, however, it is more dynamic as small events can quickly trigger back-ups and congestion in the area. It would be difficult to anticipate and allow for the various events that may trigger congestion. Experienced field personnel who can anticipate the signs of congestion and can create alternatives are the best antidotes toward limiting congestion in such situations. Live Nation employs a third party company that provides experienced parking and traffic personnel to handle this activity.

It is very important that clear and simple guidance occurs in these situations in order to prevent driver overload. The driver will generally not be familiar with the set-up or what is expected of them.

## *VI. CAMPGROUND OPERATIONS*

### **A. Campground Traffic Operations**

The type of audience drawn to a particular concert appears to be the main determining factor regarding the number of campers per event. Some performing groups draw younger, more active and festive crowds creating a need for substantial overnight accommodation facilities locally (that do not permanently exist elsewhere in the region). Drivers wishing to camp are primarily directed to the campground via Silica Road north from Baseline. When this route is used, campers who are approaching the amphitheater on Baseline are directed north on U-NW to I-NW to lessen the congestion of Silica north of Baseline.

For the major Sasquatch Festival, camping is now included in the festival entry ticket, saving time by eliminating the need for purchasing a camping site upon arrival. For other events, advance ticket purchasing is marketed and a specialty camping website has been introduced, also resulting in a large number of advance sales of camping tickets.

The number of lanes leading into the campground site, the available stacking and queuing areas, plus the positive guidance provided by personnel are important elements to facilitate the entry and exit of various sized crowds. Physical features, such as the location of ticket areas and the access, location and construction of the campground site, must be given careful attention at the planning stage; once in place, they are the least adaptable to modification. The appropriate location of these features allows for the addition of more personnel to adequately serve any surges in attendance.

The entrance to the campground is flexibly located, changed depending on the type of event, the number of campers and other metrics. This allows Live Nation to lessen the impact to area roads and to provide patrons a smoother and quicker experience, by increasing queuing lanes and moving the ticketing position to speed up the process and decrease county road congestion.

## B. Campground Pedestrian Operations

In previous years, the campground did not have direct pedestrian access to the amphitheater site. Pedestrians traversing to and from the campground and the concert area were forced to travel along the westerly side of Silica Road to reach the amphitheater. This created a conflict with on-coming traffic heading for the campground from Baseline and also caused congestion on Silica Road.

A pedestrian only access directly from the campground to the concert area has substantially aided traffic control and traffic management efforts at the Gorge. A tunnel was added to the pedestrian access in 2013, eliminating the conflict between pedestrians and vehicles using the Gate C entrance road.

## VII. EMERGENCY ROUTES

Maintenance of dedicated emergency routes is essential for the safe operation of a major outdoor recreation center. The need for occasional emergency services is always present when large groups of people gather at festive events. The route proposed in the Master Plan is 1-NW which should be maintained as the primary emergency access route. This route allows direct access to Quincy where the majority of emergency service providers are located, and provides direct access to and from both George and Quincy.

Although 1-NW is proposed as the primary response route for incidents at the amphitheater and campground, it may not be the best route for incidents in the area south of Baseline Road on Silica. Possible congestion and narrower lanes on Silica between 1-NW and Baseline might make other routes a better choice. A route using 1-SW, V-SW and Baseline to Silica is an alternative. Emergency vehicles may also travel via I-90 to the Silica Road interchange for incidents on Silica south of the amphitheater. Figure 6 illustrates the primary emergency route. Law enforcement can respond as necessary allowing the various routes to open up. The other alternate routes mentioned can be utilized by field personnel during traffic incidents such as accidents, depending on which segment of road is blocked.



 **HEATH & ASSOCIATES, INC**  
 Transportation and Civil Engineering

EMERGENCY ROUTE

FIGURE 6

## *VIII. DIRECTIONAL SIGNAGE*

Important safety features for motorists include simple directions and ample time provided to make the directed maneuvers. As previously discussed, concert attendees are generally unfamiliar with the Gorge area. Given this unfamiliarity, they need good directional signage prior to decision points. Visual reinforcement of the route that they are on is also important. The Gorge, in conjunction with Grant County, has employed a comprehensive sign plan on area roads in order to provide needed guidance. The goal of the sign plan is to create locational awareness for drivers unfamiliar with local roads, no matter what road they are using.

## *IX. ADAPTIVE MANAGEMENT*

An important part of any traffic plan includes regularly updating traffic volumes and distribution data so that traffic management adjustments can be made and the need for physical improvements re-assessed. Given the possible changing dynamics of the concert experience, traffic volume data near the site should be gathered at four year intervals. This information should include trip distribution and trip generation, including hourly data and vehicle occupancy.

Live Nation's unified management of the campground and amphitheater provides coordinated overall traffic operations for the area road systems. Continuous review of current and future seasons and additional long term cost effective improvements to area roads can be evaluated and implemented where feasible.

## *X. LIST OF POTENTIAL IMPROVEMENTS*

The following list of possible additional road improvements in the Gorge area originated with the Grant County Public Works Department. A preliminary analysis was made on each improvement as to possible cost and feasibility. None of the following improvements would totally eliminate Gorge traffic congestion since each major event at the Gorge will generate more than the average number of vehicles on a particular section of road at any given time or day. Even with major road widening of local area roads, choke points will occur – either before traffic enters widened roads or as traffic leaves widened roads. Neither Interstate 90 nor County and State roads were designed for the

occasional, large peak traffic which a major entertainment event generates. In addition, a number of the projects would require right of way which would have to be a negotiated item between the jurisdiction and local property owners. Any right of way acquisition is determined once a final design concept is approved and the extent of the needs .ascertained. The cost of the right of way is an estimate only and in no way reflects market value or acquisition cost upon condemnation.

1. Construction of a two way left turn lane on Silica between North and South Frontage Roads with associated left turn pockets.
2. Intersection radius improvements of I-90 ramps and Silica Road.
3. Left turn channelization on Silica at Sunland and the construction of three lanes on Silica to Baseline Road.
4. Right-off lane at Sunland Road southbound and Baseline Road northbound.
5. Right-off lane on Baseline at Silica Road.
6. Left turn channelization on Baseline Road at Silica.
7. Lane width improvement and/or additional lanes from Baseline northerly to the Amphitheater entrances.
8. Extension of three lanes northerly to the Campground entrance.
9. Right-off lane on I-NW westbound at Campground entrances.

Each of these projects is described in more detail starting on the following page:

It does not appear that any of these projects are necessary or prudent at this time. At current event levels, the most effective way to relieve traffic congestion is to implement the traffic control measures recommended in this traffic study. These measures move Gorge-bound vehicles off county roads at a faster rate than occurred previously, further reducing daytime backups and blockages on nearby county roads. Consequently, Heath and Associates has advised Live Nation that the infrastructure improvements discussed in this section are not warranted or needed at this time. We recommend that another season of peak traffic be experienced at the Gorge under new traffic control and operation plans to determine whether physical improvements on area roadways, intersections and off-ramps are warranted and/or can be justified on the basis of cost effectiveness and benefits provided to motorists. Any proposed improvements would then be evaluated and recommendations made based on sound engineering principles.

The adaptive management plan described above contemplates that as the facility grows in successive phases, the need for the proposed projects would be re-assessed at that time. At this juncture, as we understand it, the issue is simply whether to approve the MPR designation and whether *capacity* exists to address traffic issues as the facility grows. This list of potential future projects demonstrates that the means are available to address additional traffic issues should they arise. It may be that effective management controls will avoid the need for many or all of these improvements. But the county can approve the MPR knowing that these mitigation measures are available should they become necessary in the future.

**1. Construction of a two way left turn lane on Silica between North and South Frontage Roads with associated left turn pockets.**

This project would consist of the construction of an additional lane that would be used to provide for left turn movements. The length of the project is estimated at 1000 feet with widening to accommodate the left turn lanes and to provide for shoulder work. Storm drainage in the form of ditches and swales would be part of the roadway cross-section. The design cost to provide the drawings and specifications for review and approval by the WSDOT is estimated at \$10,000 to \$20,000 and includes the required field information, design and construction support in terms of staking and field engineering. It is not anticipated that right of way needs to be secured nor is bridge modification for I-90 needed. Restriping of the segment and intersections would also be required. Approximate improvement length is 1000 lineal feet including modifications to both on-ramp intersections and to the intersection legs lying outboard of the ramps. Width of improvement is 12 feet. The estimated construction cost would range from \$70,000 to \$100,000.

**Estimated design and construction cost = \$80,000 to \$120,000.**

**2. Intersection radius improvements of I-90 ramps and Silica Road**

This project would be located on the westerly side of I-90 in order to create more expeditious turning movements. Any enhancements should be constructed in accordance with the WSDOT Design Manual. Improvements to radii are minor in nature and it is assumed that adequate right of way is available to create more sweep turns. Storm drainage considerations would be minor

with no enhancement to the system required. Surveying and design information would be required for submittal to the WSDOT for approval. Engineering and surveying is estimated to cost \$5000 to \$15,000 . and construction costs are estimated at \$20,000 to \$30,000.

**Estimated design and construction cost = \$25,000 to \$45,000.**

**3. Left turn channelization on Silica at Sunland and the construction of three lanes on Silica to Baseline Road.**

The scope of work for this project includes widening of the road to provide a continuous third lane between Sunland and Baseline along with widening on Silica south of the intersection for a total length of 5800 feet. The lane width would be 12 feet for the entire length. Right of way on the east side would need to be secured from the neighboring properties. Storm drainage would be provided along its length in the form of ditches and a 6 to 8 foot shoulder should also be provided. The design cost to provide the drawings and specifications for review and approval by Grant County Public Works is estimated at \$30,000 to \$40,000.and would include the required field information, design and construction support in terms of staking and field engineering. Approximate improvement length is 5800 lineal feet including a width of 12 feet and includes drainage modifications and shoulder improvements. Right of way costs are assumed to be 10,000 dollars. The estimated construction cost would range from \$400,000 to \$500,000.

**Estimated design and construction cost = \$440,000 to \$550,000.**

**4a. Right-off lane at Sunland Road southbound.**

The right off lane on Silica at Sunland would be a total of 300 feet of 12 foot lane to accommodate right turns for traffic southbound onto Sunland Road. Additional right of way would most likely need to be secured. For estimate purposes it is also assumed that this project would be stand-alone and not incorporated into the project above (No. 3). Storm drainage considerations would be minor with no additional enhancement to the system anticipated outside of ditch relocation. Surveying and design information would be required for submittal to Grant County Public Works for approval. Engineering and surveying is estimated to cost \$5000 to \$15,000 and construction costs are estimated at \$30,000 to \$40,000. Right of way acquisition is assumed to be \$5000 dollars.

**Estimated design and construction cost = \$40,000 to \$60,000**

**4b. Right-off lane on Silica at Baseline Road northbound.**

The right off lane on Silica at Baseline would be the same in terms of design and issues. A total of 300 feet of 12 foot lane to accommodate right turns for traffic northbound onto Baseline Road is assumed. Additional right of way would most likely need to be secured. For estimate purposes, it is also assumed that this project would be stand-alone and not incorporated into the project above (No. 3). Storm drainage considerations would be minor with no additional enhancement to the system anticipated outside of ditch relocation. Surveying and design information would be required for submittal to Grant County Public Works for approval. Engineering and surveying is estimated to cost \$5000 to \$15,000 and construction costs are estimated at \$30,000 to \$40,000. Right of way acquisition is estimated at \$5000 dollars.  
**Estimated design and construction cost = \$40,000 to \$60,000**

**5. Right-off lane on Baseline at Silica Road.**

The right off lane on Baseline at Silica could be lengthened as this is the major route for Amphitheater traffic from the east and north. The length is assumed to be a total of 1000 feet of 12 foot lane to accommodate right turns for traffic westbound to northbound onto Baseline Road. Additional right of way would need to be secured. Storm drainage considerations would be minor with no additional enhancement to the system anticipated outside of ditch relocation. Surveying and design information would be required for submittal to Grant County Public Works for approval. Engineering and surveying is estimated to cost \$10,000 to \$20,000 and construction costs are estimated at \$70,000 to \$90,000. Right of way acquisition is estimated at \$10,000.

**Estimated design and construction cost = \$90,000 to \$120,000**

**6. Left turn channelization on Baseline Road at Silica.**

This project proposes to modify the eastbound movement by adding a left turn lane. The project is treated as a stand-alone project though cost savings can be realized if it is designed and constructed in conjunction with number 5 above. This left turn movement is fairly light and a 12 foot lane for a total of 300 feet should accommodate the traffic. Additional right of way would probably not be needed. Storm drainage considerations would be minor with no additional enhancement to the system anticipated outside of ditch relocation. Surveying and

design information would be required for submittal to Grant County Public Works for approval. Engineering and surveying is estimated to cost \$5000 to \$15,000 and construction costs are estimated at \$30,000 to \$40,000.

**Estimated design and construction cost = \$35,000 to \$55,000**

**7. Lane width improvement and/or additional lanes from Baseline northerly to the Amphitheater entrances.**

The scope of work for this project includes widening of the road to provide an additional fourth lane from Baseline through the entrances for a total length of 2400 feet. The lane width would be 12 feet for the entire length. Right of way on the east side would likely need to be secured from the neighboring properties. Storm drainage would be provided along its length in the form of ditches. A 6 to 8 foot shoulder should also be provided which could allow more inbound lanes by placement of cones. Right of way acquisition is not included in the estimate. The design cost to provide the drawings and specifications for review and approval by Grant County Public Works is estimated at \$30,000 to \$40,000. Approximate improvement length is 2400 lineal feet which would include a width of 12 feet and includes drainage modifications and shoulder improvements. The estimated construction cost would range from \$180,000 to \$220,000. Right of way costs are estimated at \$20,000 dollars.

**Estimated design and construction cost = \$230,000 to \$280,000 dollars**

**8. Extension of three lanes northerly to the Campground entrance.**

The scope of work for this project includes widening of the road to provide a continuous third lane between the amphitheater entrance and the campground entrances. The total length of the project is approximately 3000 feet and would include some modifications at the Silica/I-NW intersection. The lane width would be 12 feet for the entire length. Right of way and/or slope easements would most likely be required in coordination with the state. This area might also be considered environmentally sensitive and require further study during design and review. The design cost to provide the drawings and specifications for review and approval by Grant County Public Works is estimated at \$20,000 to \$30,000 and would include the required field information, design and construction support in terms of staking and field engineering. Approximate improvement length is 3000 lineal feet with a width of 12 feet and includes drainage modifications and shoulder improvements. The estimated construction cost would

range from \$250,000 to \$300,000, with right of way at \$30,000, but does not include environmental mitigation expenses which may be required.

**Estimated design and construction cost = \$300,000 to \$360,000**

**9. Right-off lane on 1-NW westbound at Campground entrances.**

The right off lane on 1-NW near the entrances is assumed to be a total of 700 feet of 12 foot lane to accommodate right turns for traffic westbound to northbound. Storm drainage considerations would be minor with no additional enhancement to the system anticipated outside of ditch relocation. Surveying and design information would be required for submittal to Grant County Public Works for approval. Engineering and surveying is estimated to cost \$10,000 to \$20,000 and construction costs are estimated at \$50,000 to \$70,000. Right of way acquisition is estimated at \$10,000.

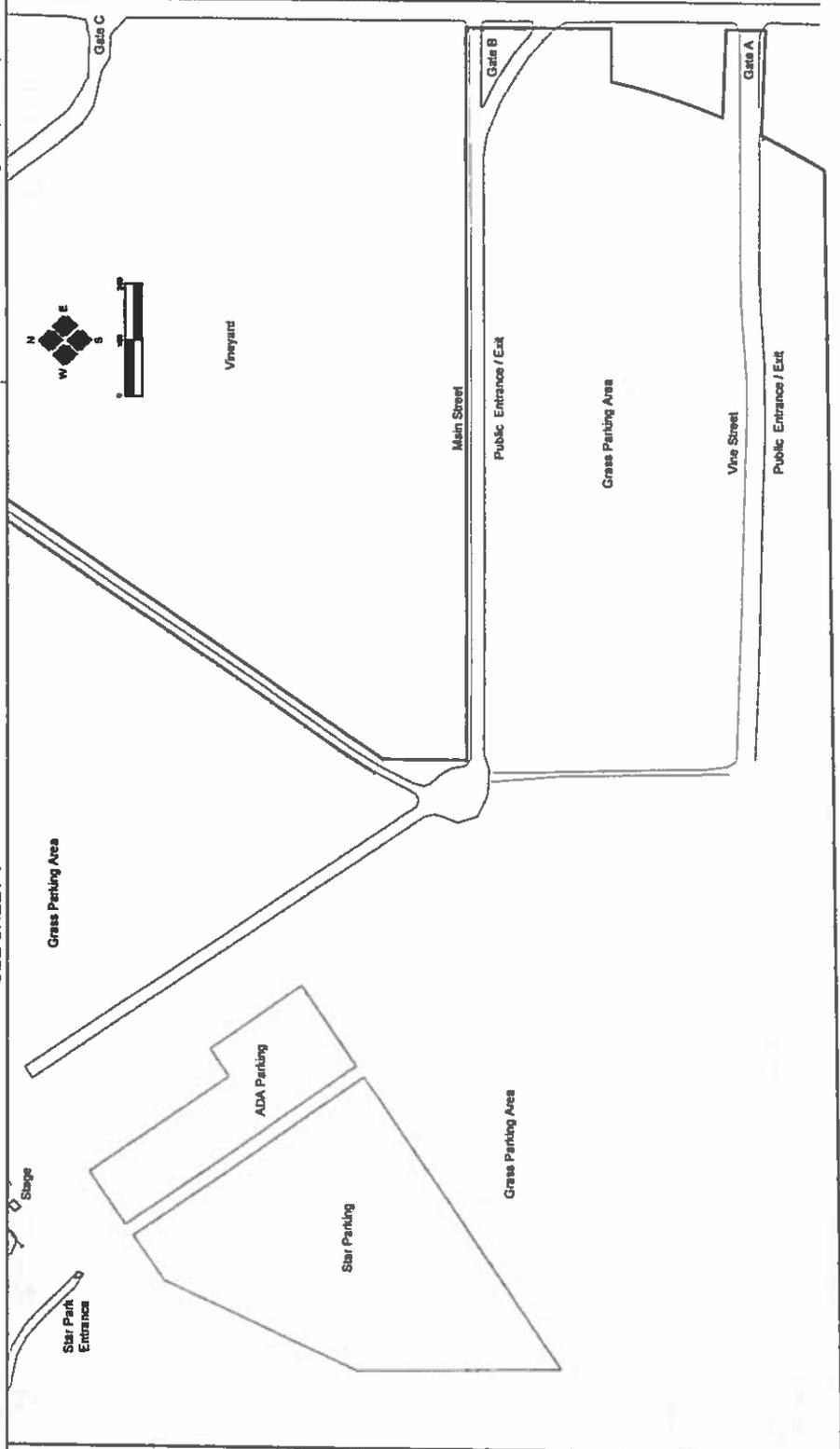
**Estimated design and construction cost = \$70,000 to \$100,000**

## SITE PLANS



SEE SHEET 1

SEE SHEET 3



801 North 44th Avenue  
 Tukwila, WA 98148  
 206.844.7000  
 Fax 206.965.3600  
[www.HLA.com](http://www.HLA.com)



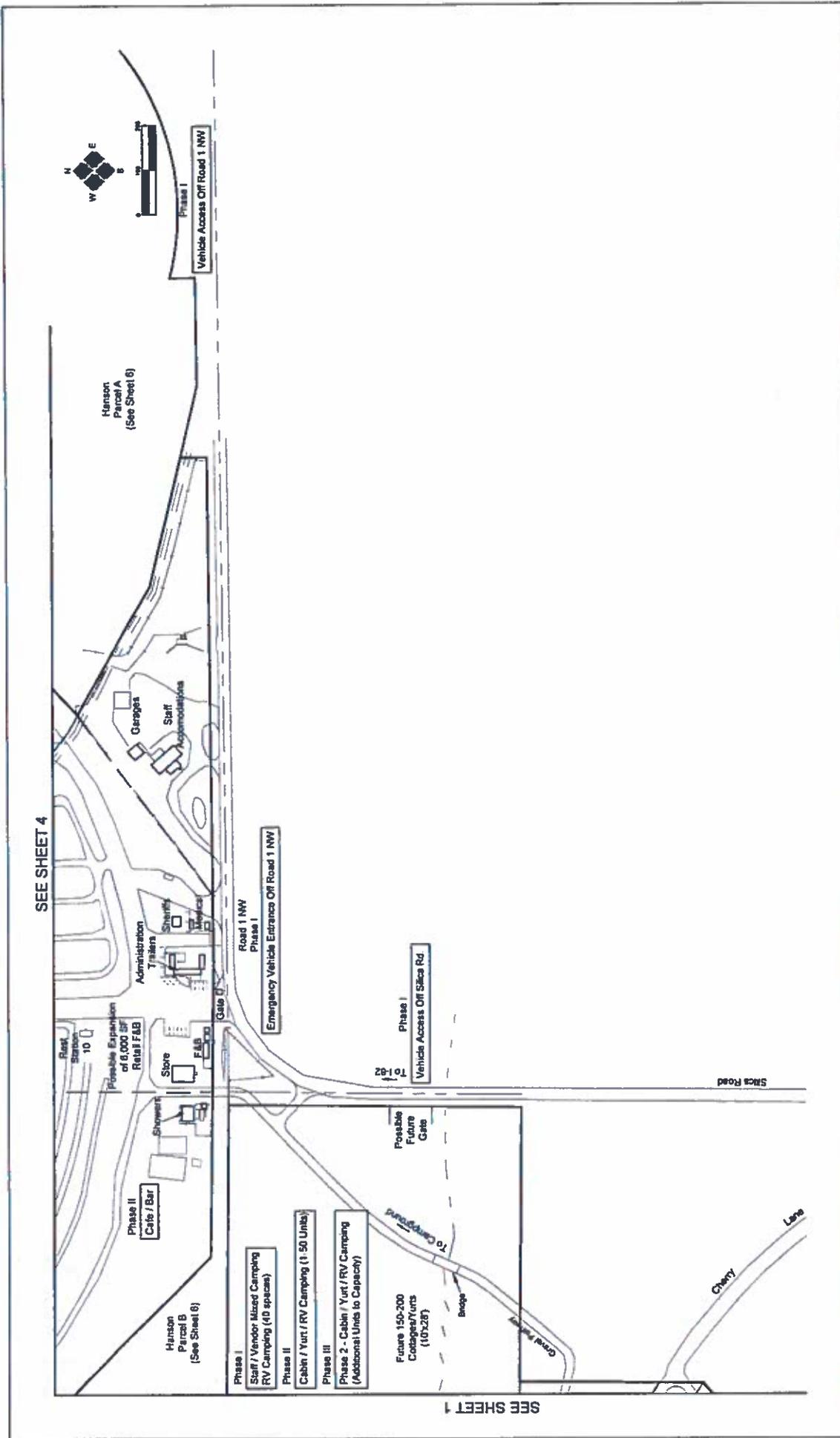
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 DRAWN BY: TDF

**The Gorge Amphitheatre**  
 Master Plan Resort Application  
 Grant County, Washington

Master Plan Exhibit

SHEET  
 2  
 OF  
 7



SEE SHEET 4

SEE SHEET 1

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DRAWN BY:	TJF	or
		7

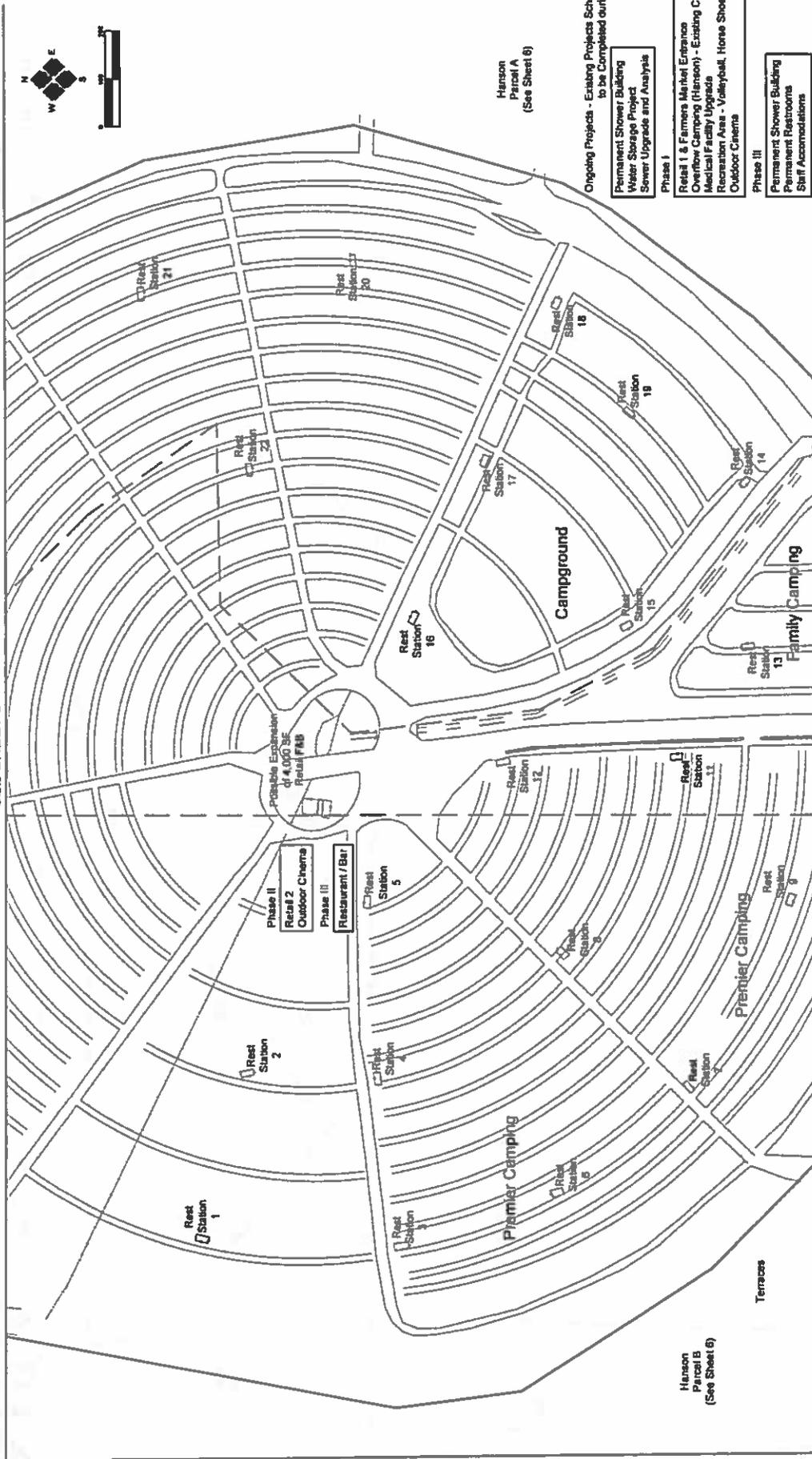
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601 North 37th Avenue  
 Tukwila, WA 98062  
 206-944-7000  
 Fax 206-944-3800  
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 Master Plan Resort Application  
 Grant County, Washington  
 Master Plan Exhibit

SEE SHEET 5



SEE SHEET 3

Hanson Parcel A (See Sheet 6)

Ongoing Projects - Existing Projects Scheduled to be Completed during 2014

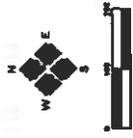
Permanent Shower Building  
 Water Storage Project  
 Sewer Upgrade and Analysis

Phase I

Retail 1 & Farmers Market Entrance  
 Overflow Camping (Hanson) - Existing CUP  
 Medical Facility Upgrade  
 Recreation Area - Volleyball, Horse Shoes etc.  
 Outdoor Cinema

Phase III

Permanent Shower Building  
 Permanent Restrooms  
 Staff Accommodations



Hanson Parcel B (See Sheet 6)

**The Gorge Amphitheatre**  
 Master Plan Resort Application  
 Grant County, Washington

Master Plan Exhibit

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FILE NAME:	12108.dwg	DRAWING:	12108.dwg
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3.4 REVISION: PHASED IMPROVEMENTS 1-31-14

801 North 95th Avenue  
 Yuba, WA 99902  
 509.965.7000  
 Fax 509.965.3500  
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 Civil Engineering • Land Surveying • Planning

SHEET 4 of 7



Hanson  
Parcel C  
(See Sheet 7)

Hanson  
Parcel B  
(See Sheet 8)

Campground

Hanson  
Parcel A  
(See Sheet 6)

SEE SHEET 4

801 North 39th Avenue  
Tulsa, WA 99502  
509-644-7000  
Fax: 509-665-3800  
www.hla-va.com



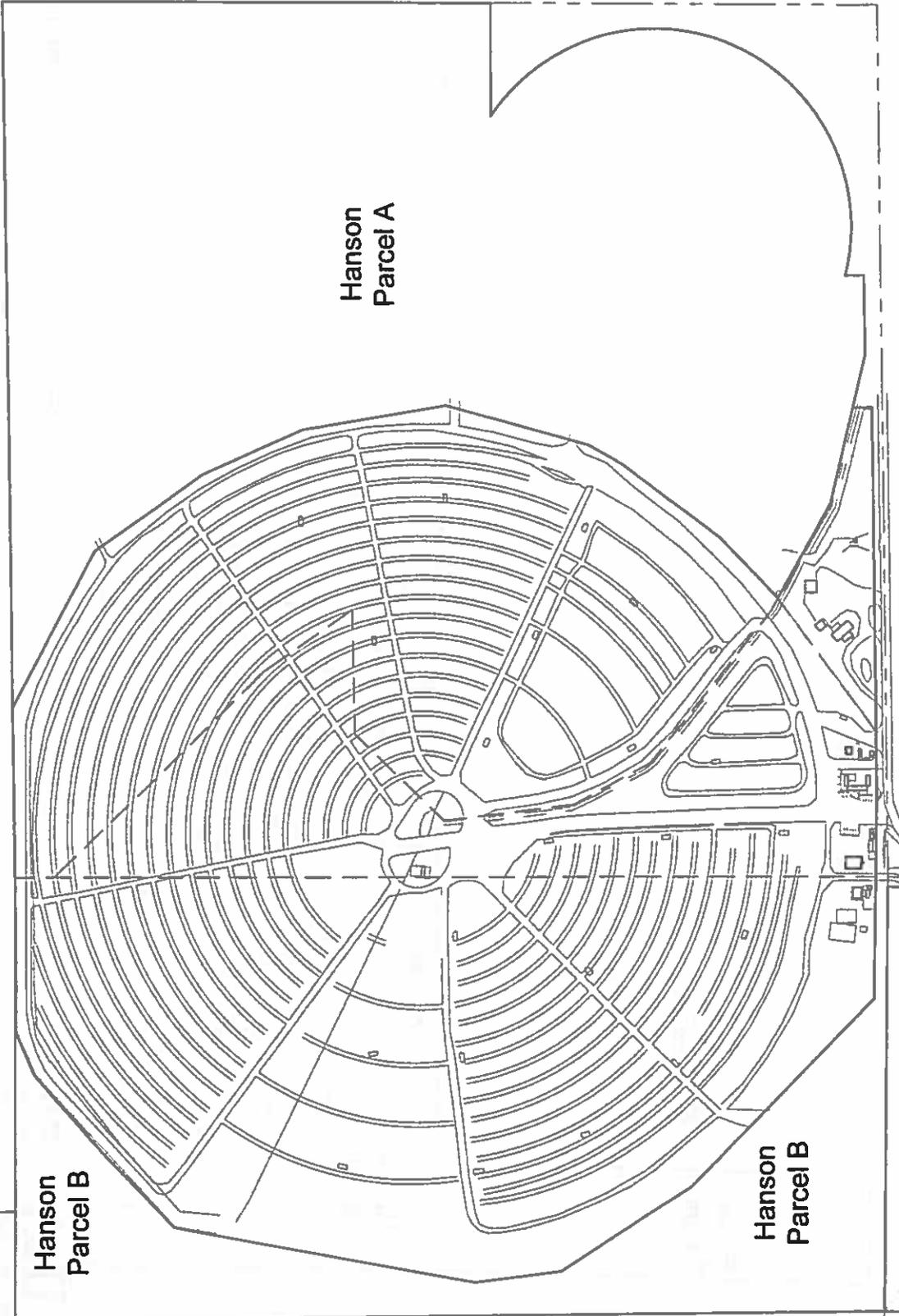
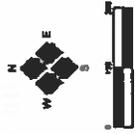
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Master Plan Resort Application  
Grant County, Washington  
Master Plan Exhibit

SHEET 5 OF 7

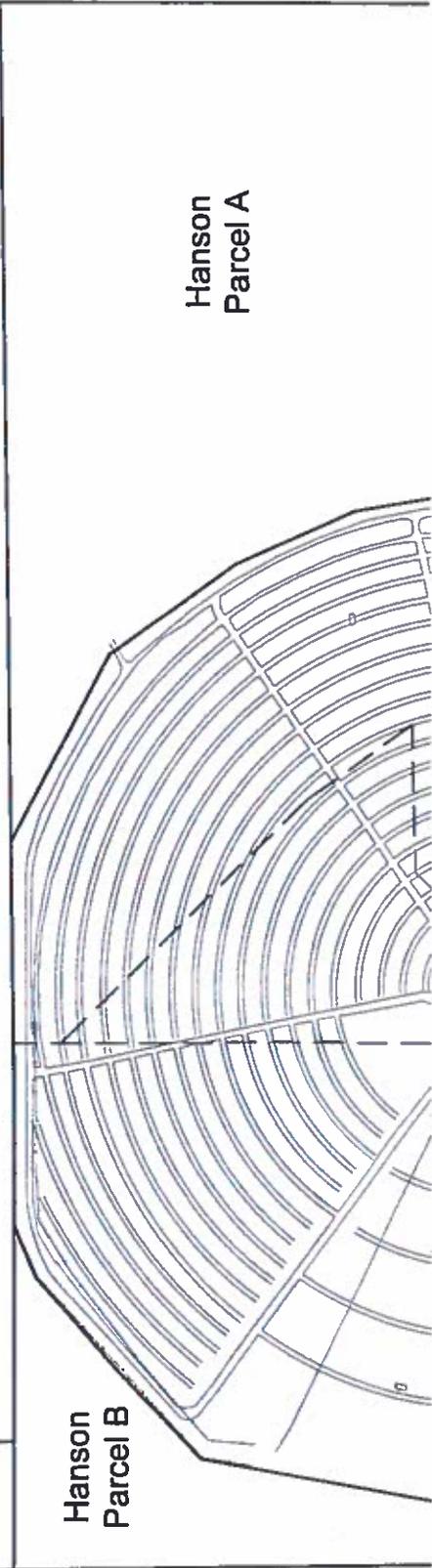


 <b>HLA</b> Hilbigke, Lunnen Associates, Inc. Civil Engineering • Land Surveying • Planning	801 North 29th Avenue Tulsa, OK 74104 500.946.7000 Fax 500.946.9800 www.hla.com	36 REVISION: PHASED IMPROVEMENTS 1-31-14	JOB NUMBER: 12100 DATE: 12-5-13 FILE NAME: 12100.dwg DRAWN BY: TDF	6 or 7
	<b>The Gorge Amphitheatre</b> Master Plan Resort Application Grant County, Washington			Master Plan Exhibit



Hanson  
Parcel C

Phase I  
Additional Terrace Camping



 <b>HLA</b> Hillier, Lomax Associates, Inc. Civil Engineering • Land Surveying • Planning	800 North 47th Avenue Yakima, WA 98902 509.665.7000 Fax 509.665.8000 www.hla.com	JOB NUMBER: 12108	DATE: 12-5-13	<b>The Gorge Amphitheatre</b>	
			FILE NAME: 12108.dwg	DRAWN BY: TDF	Master Plan Resort Application Grant County, Washington
					37
					REVISION: PHASED IMPROVEMENTS 1-31-14
					Master Plan Exhibit
					SHEET 7 OF 7

## MASTER PLAN ELEMENTS

## **GORGE - MPR PHASING**

**ONGOING PROJECTS - existing projects scheduled to be completed during 2014**

**Overflow Camping - roads. Parcel 1**

**Amphitheatre - medical centre Parcel 2**

**Campground - permanent shower building Parcel 9**

**Water Storage project.**

**Sewer upgrade and analysis**

## **PHASE I - 1 to 4 years**

**Regular Show capacity to 23,500**

**Festival Capacity to 29,000**

**Amphitheatre - VIP club expansion**

**Vehicle Access off Silica Rd to Parcel 7**

**Emergency vehicle entrance off Road1 to Parcel 9**

**Vehicle Access off Rd1 NW to Hanson A parcel**

### **Campground**

- **retail 1 & farmers market - entrance - Parcel 9**
- **additional Terrace camping - Hanson C**
- **overflow camping (Hanson) - existing CUP - Hanson A north?**
- **medical facility upgrade - Parcel 9**
- **recreation area - volleyball, horse shoes etc - parcel 8 & 9**
- **Outdoor cinema - parcel 9**

### **Camping B - amphitheatre side**

- **Cafe/Bar (Aramark warehouse) Parcel 5**
- **Staff / Vendor mixed camping - Parcel 7 south**
- **/ RV camping (RV - 40 spaces) - Parcel 7, south**

### **Amphitheatre**

- VIP Club expansion - 2 story permanent building

### **PHASE II - 5 to 9 years**

Festival cap 32,000

Regular show cap 25,000

Cabin/Yurt/RV camping - 1 - 50 units Parcel 7 north

vehicle path, camp to amp

Zip Line - Parcel 8, Hanson B, Parcels 7,4,3,1

Retail 2 - Pivot - Parcel 9

Pivot outdoor cinema - Parcel 9

Cafe/Bar - Parcel 9 near to entrance

permanent bathrooms - up to 200 stalls parcel 2

### **PHASE III - 10 to 20 years**

Festival cap 35,000

Pivot restaurant / bar - Parcel 9

Phase 2 cabin/yurt/RV camping - additional units to capacity - parcel 7

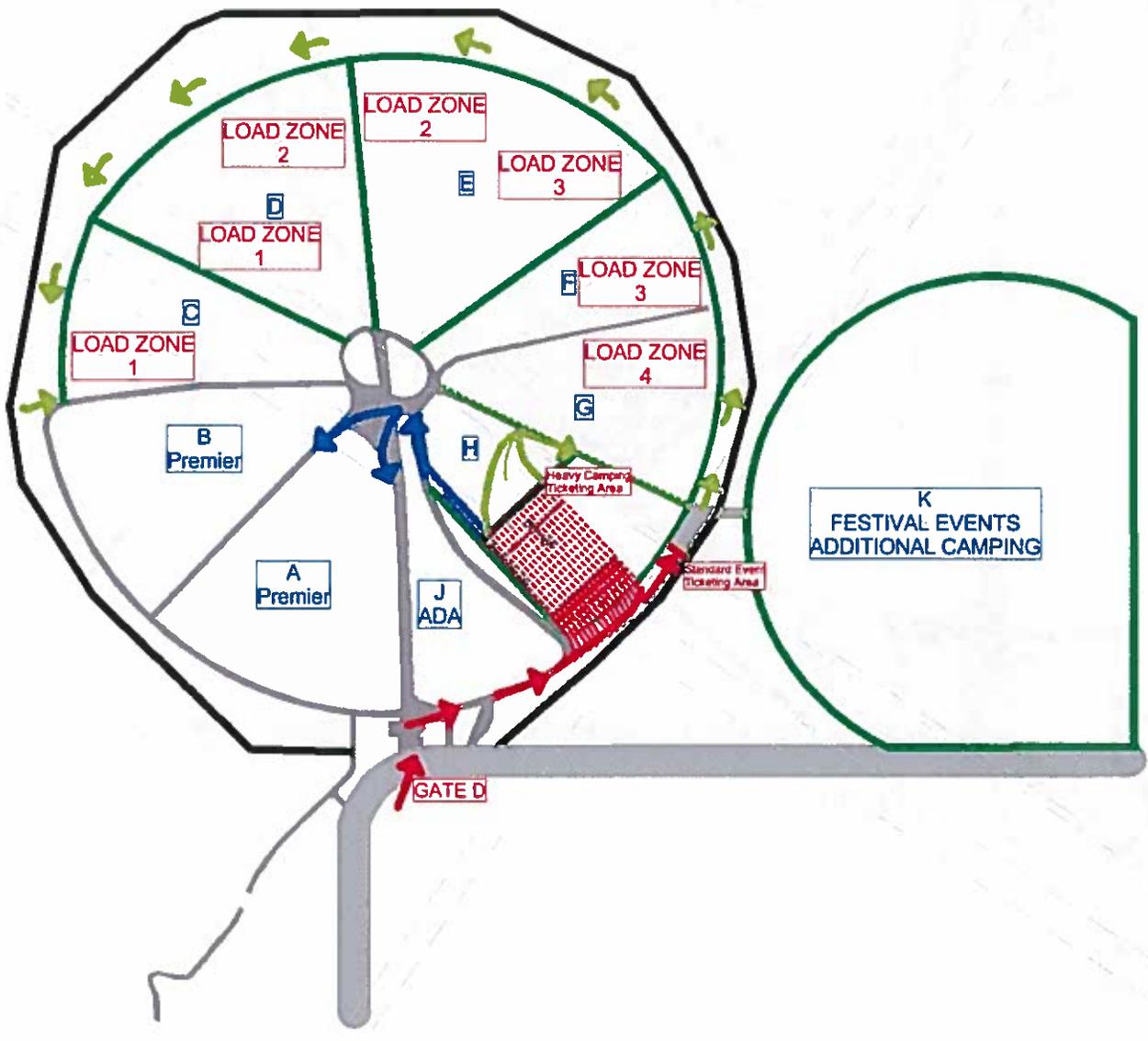
Phase 2 - permanent bathrooms - up to additional 200 stalls parcel 2

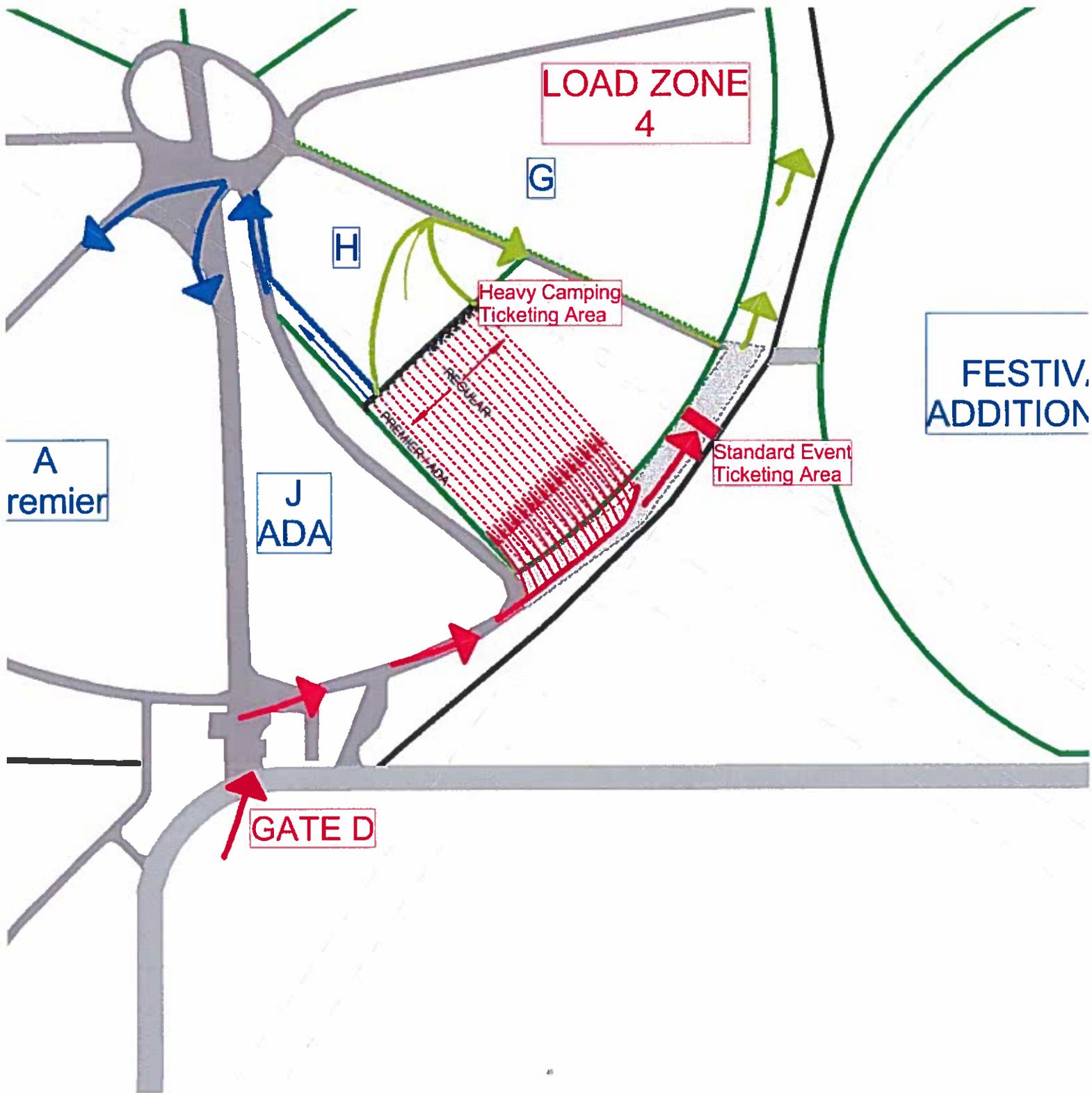
permanent shower building - parcel 1 & 5, Hanson A,B,C

permanent restrooms - parcels 8,9,10, Hanson A,B,C

staff accommodations - parcel 10/11

## CAMPGROUND TICKET INTAKE







July 23, 2015

David Bricklin  
Bricklin & Newman, LLP  
1001 Fourth Avenue, Suite 3303  
Seattle, WA 98154

Subject: Gorge Amphitheater Traffic Update – Phase I

Mr. Bricklin:

Thank you for the opportunity to offer comments regarding improvements proposed for the first phase of the Gorge Amphitheater MUP. You have asked me to review the proposed changes to the site from a traffic operations standpoint. The proposed phase I changes are primarily intended to enhance the experience at the Gorge Amphitheater and campground for existing patrons. There is no indication that they will result in increased patronage. The Phase I proposals do not include a request to change the attendance limitations in the Concert Management Agreement. The Phase I changes to the amphitheater and the campground are described and a discussion on the effect on local traffic is presented below.

#### **Cliff House Remodel and Expansion**

The changes proposed for the Cliff House are not anticipated to create additional traffic to the site as its purpose is to enhance the existing concert goers' experience.

#### **Hilltop Food and Beverage Improvements**

The purpose of the Hilltop Food and Beverage improvements is to increase the offerings at the amphitheater and to create a more permanent structure with improved operations for the patrons. The improvements are contained within the amphitheater and would only be open during concerts. No change in traffic is anticipated with these improvements.

#### **Campground Convenience Store Addition/Remodel**

The change to the campground convenience store is proposed to increase local sales of food and beverages to the patrons of the campground. The improvements in offerings would most likely result in reduced traffic as patrons would be better able to acquire their supplies on-site rather than travel off-site to other locations. The convenience store is proposed to operate during the concert season only.

#### **Retail Expansion**

The addition of up to 6,000 square feet of retail is proposed to increase local sales of dry goods and memorabilia to the patrons of the campground. The convenience store is proposed to operate during the concert season only. No change in traffic is anticipated with this addition.

**Espresso Stand**

The espresso stand will be operated while the campground is open and would not result in a change in traffic as it will offer services to campground patrons.

**Medical Shade Structure**

The medical shade structure will provide an improved facility for medical attention. No change in traffic is anticipated as it will operate during the concert season only. If the improved facility helps to limit the number of medical service calls, a slight decrease in traffic could be expected.

**Addition of 150 to 200 Cottages and Yurts**

The addition of the cottages and yurts is proposed as an alternative camping experience for patrons. The cottages and yurts would effectively supplant the general campground users by providing a unique and more attractive campground experience. Campground traffic arrives earlier than the amphitheater traffic. Consequently, if the cottages and yurts resulted in a shift of someday use attendees to campers, it would provide a mitigating effect to the area traffic. If it resulted in a shift of existing campground campers to the cottages and yurts, it would have no effect at all.

**Wastewater Lagoon and Other Utility Improvements**

No change in traffic is anticipated given these improvements.

**Terrace Camping – Hansen Property**

The addition of terrace camping to the Hansen property is also proposed as an alternative camping experience for patrons. The new camping area provided would effectively supplant the general campground users by providing a unique and more attractive campground experience. As is the case with the cottages and yurts, the traffic for the Terrace camping arrives earlier than the day use amphitheater traffic mitigating the venue's impact on area traffic.

**Traffic Counts**

The higher attended events of the season are occurring in August and baseline traffic volumes will be gathered at that time. The concert analyzed in past seasons was the Dave Matthews weekend and that is the weekend that is recommended for analysis this year for a good comparison.

Please call if you want to discuss further.

Sincerely,



Gregary B. Heath, P.E., P.T.O.E.