



# Tri-County Health Department

Serving Adams, Arapahoe and Douglas Counties

Richard L. Vogt, M.D.  
Executive Director

August 25, 2000

Mr. Bill Detweiler, Manager  
Planning and Zoning Division  
Arapahoe County Department of Development Services  
And Infrastructure Management  
5334 South Prince Street  
Littleton, Colorado 80166-0001

RE: Case #Z00-013  
WorldPark Rezone/Preliminary Development Plan

Dear Mr. Detweiler:

Tri-County Health Department has reviewed the application and has several comments.

## Noise

The proposed motor sport and sport shooting activities will create loud noises both on and off the property. While Tri-County does not believe that noise from the site will create direct health effects off-site, we do believe the motor sport uses, in particular, will create noise impacts in neighboring areas. To help the County assess potential noise impacts of the activities as currently proposed, Tri-County has estimated the level of noise that the motor sport uses are likely to produce at various distances from the source. Our calculations are based on the following assumptions:

- The noise travels in a line of sight, with essentially no barriers.
- There is no vegetative effect.
- There are no environmental effects, such as wind or temperature inversions.
- The noise is a continuous, single point source.
- The background noise level is 40 – 45 decibels (dB).
- Estimated noise levels associated with each use are as follows:

✓ Nitro dragsters at Bandimere	140 dB at one meter from the source
✓ Other dragsters	120 dB at one meter from the source
✓ Sports Car Club of America (SCCA) race cars	113 dB at one meter from the source (10 vehicles, each at 103 dB)
✓ Normal busy highway	95 dB at source

We recognize that noise at the site will vary with time of day and level of activity. Also, changes

in any of the assumed conditions will increase or decrease actual noise levels. However, our calculated noise levels, shown below, provide a general indication of what might be expected in the vicinity of the development.

Distance from source	140 dB (Bandimere nitro dragsters)	120 dB (Other dragsters)	113 dB (10 cars at SCCA-type race)	95 dB Highway
1 mile	75 dB	56 dB	49 dB	31 dB
2 miles	70 dB	50 dB	45 dB	25 dB
3 miles	66 dB	46 dB	41 dB	21 dB
4 miles	64 dB	44 dB	39 dB	19 dB
5 miles	62 dB	42 dB	37 dB	17 dB
10 miles	56 dB	36 dB	29 dB	11 dB
15 miles	50 dB	30 dB	25 dB	7 dB

Tri-County has monitored noises at homes in the vicinity of Fiddler’s Green, and regularly responds to noise complaints within our service area. In our experience, noise complaints will occur any time individuals are able to perceive noise much above background levels. This is partly due to the fact that humans are better at detecting relative differences in noise levels than absolute noise levels. At Fiddlers Green, we found that noises at homes that were measured at 3 dB over background were easily perceived as though they were occurring “in the back yard”. The table above indicates that the loudest Bandimere racecars (nitro dragsters) may be heard up to ten miles from the track. Our experience suggests that noise impacts from the racetrack are likely to be perceived up to five miles from the source. Complaints can be expected from any areas where the noise is perceived as an annoyance. The attached map depicts existing or approved residential areas within a five-mile radius of the Bandimere track as currently proposed. In addition, there are several large lot homes on either side of Watkins Road south of I-70 which are not shown on the map.

Colorado’s noise abatement statute (CRS 25-12-103) sets maximum permissible noise levels for various land uses at different time periods. Noises that exceed these levels are considered to be a public nuisance. Noise levels from industrial uses are considered a public nuisance if they exceed 80 db(A)<sup>1</sup> beyond 25 feet of the property boundary during the day (7 a.m. – 7 p.m.). At night (7 p.m.- 7 a.m.), the nuisance level is 75 db(A). For noise levels from commercial uses, the nuisance levels are, respectively, 60 db(A) and 55 db(A). For periodic or impulsive noises, the nuisance level is set at a level 5 db(A) lower than those listed. Motor vehicle speed or endurance events are specifically exempted from the statute. However, the exemption is effective only for specific periods of time for which the governing jurisdiction authorizes such a use. Therefore, if the County were to authorize an exempted use for certain times of the day or night, the use would be subject to the noise standard for times other than those specified.

Because Tri-County prefers to address noise issues from a quality of life rather than a regulatory perspective, we encourage the County to look beyond State regulatory requirements in dealing with potential noise problems. At this point, the WorldPark application is conceptual and provides no data on actual noise impacts from the proposed motor sport activities. In our review, we found limited information in the literature on noise impacts from existing motor sport venues. Also, we were unable to confirm actual decibel output of the nitro dragsters that may

<sup>1</sup> Db(A) means sound levels in decibels (dB) measured on the “A” scale of a standard sound level meter.

be using Bandimere. We believe the County needs more specific data on the noise issue before making a decision on the Preliminary Development Plan (PDP).

As part of the PDP evaluation, we recommend that the applicant be required to conduct a thorough noise study that does the following:

- Identifies the noise levels, by vehicle type, that can be expected at the source;
- Estimates the duration and frequency of expected noise levels;
- Plots the distances over which the noises will be attenuated from the source; and
- Identifies noise impacts to other on-site uses, as well as current and future off-site uses; and
- Evaluates various source control options.

The application narrative states that multi-family residential uses will be allowed in Land Use Areas # 1 and #3. However, these areas are not shown on the PDP maps. Because there will be substantial noise impacts on any residential development on the WorldPark property, we specifically request that the applicant clarify this aspect of the application.

The noise study should be provided to Tri-County Health Department for review and recommendations.

### **Sanitary Sewer**

The Sanitary Sewer analysis portion of the Master Utility Plan lacks sufficient detail to assess whether the Utility Plan is adequate. The demand calculations indicate that approximately 10.81 million gallons per day will be generated by the commercial, retail, light industrial, office and event staff, plus an additional 1.5 million gallons from the maximum event. Since the plan proposes connecting to an existing interceptor, we presume that wastewater will flow to an existing wastewater treatment plant (WWTP). However, the plan does not state which WWTP will provide treatment, or whether that plant has the capacity or willingness to provide treatment.

Based on the wastewater flow from WorldPark, it is very likely that expansion of an existing WWTP is necessary. Expansion of an existing WWTP will require site approval from the Colorado Department of Public Health and Environment (CDPHE). Site approval typically requires 9 to 12 months. It is uncertain whether site approval can be obtained within the proposed schedule for development of WorldPark.

We believe that the wastewater treatment entity must be identified at this time so that the necessary approval process can be determined and evaluated. We would request that an assessment of the capacity of the existing facility be submitted, so it can be determined whether an expansion is necessary. If an expansion is necessary, it needs to be determined whether site approval can be obtained within the schedule for the development. In addition, we recommend that an agreement be provided between the developer and the wastewater utility that the utility will serve the development.

Page 3 of the Master Utility Plan states, "The existing sanitary sewer should be able to transport all sanitary waste produced on the proposed WorldPark site". However, page 4 states, "If warranted due to downstream conditions of the existing interceptor a temporary holding facility may be utilized to contain the sanitary flow to acceptable levels during major

sport and entertainment events.” We cannot support the proposal to utilize a temporary holding tank. The proposal to use the temporary tank indicates that either the interceptor sewer line and/or the wastewater treatment plant would not be adequate to convey/treat the wastewater from the facility. The use of a holding tank would also impose significant additional maintenance requirements upon the utility, and increase the potential for spills and odors. Residual solids collecting in the bottom of the tank may need to be periodically collected and hauled to a wastewater treatment plant for treatment and disposal. Odors from retained sewage may result from septic conditions within the holding tank. We would prefer that the collection and treatment systems be designed to handle the wastewater from the facility, without requiring a holding tank.

## **Air Quality**

### Vehicle Emissions

Vehicle emissions are the largest source of air pollution in the Denver Metropolitan area. Though the Metro area has not violated either the federal carbon monoxide or small particulate (PM10) health standard for some years, maintenance plans for these two pollutants require that we continue to control concentrations of these pollutants in our air.

The WorldPark Preliminary Traffic Impact Analysis estimates that the development will generate between 122,000 and 152,000 vehicle trips on a typical weekday. It recognizes that weekend events throughout the year will generate a large spectator base, but does not project the number of additional vehicle trips that these activities will generate. Because WorldPark is specifically designed as a regional recreational attraction, we believe it is important to assess the project’s potential to create air quality impacts associated with vehicle-related emissions from regular site traffic or event-specific traffic congestion. This assessment can be done in a staged manner. Air quality modeling efforts exist for regional attractions such as Coors Field, the Pepsi Center and possibly others. We recommend that the applicant be asked to identify existing modeled projects that may have traffic impacts comparable in nature to those projected for WorldPark, and provide a summary of the air quality impacts. This type of comparison can serve as an initial air quality screen, and a basis for determining if additional evaluation or any mitigation efforts may be warranted.

### Fugitive Dust

Overlot grading for development can generate significant amounts of fugitive dust that can migrate into developed areas. This exposes residents to dust, which can cause respiratory problems.

An Air Pollutant Emission Notice and Application for Emission Permit and a Fugitive Dust Control Plan for Land Development will need to be completed for the development. These will provide some assurance that the developer is taking appropriate measures to mitigate fugitive dust emissions from the development. The applicant should contact Lynn Robbio Wagner, in our Commerce City office, at 303 288-6816, regarding these requirements

## **Shooting Sport Activities**

### Management of Lead Shot

When a gun is fired, metal particles can be released into the air and inhaled. This is not an issue for outdoor ranges, but can create a potential health risk at indoor ranges where lead shot is used. We recommend that lead shot be prohibited from use in any indoor ranges that may be constructed as part of the project.

CDPHE has taken the regulatory position that during the active life of a shooting range, the discharge of sport ammunition does not constitute hazardous waste disposal. This is because the agency does not consider the rounds to be discarded, which is a necessary criterion for a material to be classified as a solid or hazardous waste. Rather, the shooting of bullets is a discharge incident involving normal product use and is not considered a regulated solid or hazardous waste activity.

However, when a shooting range is closed or if the soils are to be excavated, moved, buried or otherwise “managed”, the owner or operator of the property must determine whether the soils bearing lead shot are a hazardous waste, as defined in State statute (6 CCR 1007-3, Section 262.11). This would involve having the soils tested to determine whether they exhibit the characteristic of toxicity for lead, pursuant to the Federal Resource, Conservation and Recovery Act (RCRA). If the lead-bearing soil exhibits the characteristic of a hazardous waste, it must be managed as such until it is either recycled or disposed.

Since there is a potential for generating a hazardous waste at a shooting range, CDPHE recommends that target areas be designed in a way that minimizes the amount of waste that will ultimately be generated. Operators are encouraged to periodically recover and recycle lead shot. This reduces the likelihood of the operator incurring future hazardous waste management costs, and may also produce revenue through the sale of the spent shot.

## **Equestrian Uses**

### Potential Compatibility Issues

The Conceptual Land Use Plan shows the indoor equestrian ring, riding ring and polo fields located immediately adjacent to the shooting sport activities to the south and to the Bandimere Speedway on the west. The shooting sport and the Speedway are the site activities that produce the loudest noises, in the 140 dB range. In addition to being loud, gunshot noises are sharp, impact noises that can startle horses, and create safety risks for riders and others. We encourage the applicant to discuss these issues with the equestrian community to determine if they would utilize these facilities in the proposed location, and, if not, to identify criteria to re-locate the equestrian uses.

### Water Quality and Nuisance Control

Horse washdown water should be managed to avoid nuisance conditions and contamination of surface water runoff. Nuisance conditions may include soil erosion and fly, odor and mosquito

problems associated with ponding or stagnant water. Washdown water should not be allowed to discharge to a stream, ditch or pond.

We recommend that the applicant prepare and implement a manure management plan. Manure can be properly managed either by composting or off-site disposal in a landfill. If the equestrian uses are located close to other activities that are likely to be sensitive to odors, we do not recommend on-site composting. We would prefer that all manure be collected daily and placed in covered receptacles, and either hauled to a landfill or properly composted off-site. Daily collection and hauling of the manure will minimize the potential for fly and odor problems and contamination of water. The applicant should submit the manure management plan to Tri-County Health Department for review and comment.

### **Storm Water Quality**

A Colorado Discharge Permit System (CDPS) permit will be required for construction from CDPHE. The permit will require that erosion control measures be implemented during construction. The applicant should contact the CDPHE Water Quality Control Division, Permits and Enforcement Section, at 303 692-3500, regarding this permit.

In addition, we strongly support adoption of structural and non-structural best management practices, landscaping design and other methods to maintain the high quality of storm water runoff throughout the lifetime of the project.

### **Hazardous Materials**

The application does not indicate if underground storage tanks (UST) or aboveground storage tanks (AST) will be used to store vehicle fuels on site.

If UST are used, they must comply with the regulations of the Office of State Oil Inspections. Compliance with these regulations will reduce the likelihood of a tank or piping leak and release of fuel, and provide for detection if a leak occurs. The Oil Inspections Section (OIS) can be reached at 303 620-4300.

AST with a capacity of 660 gallons or more must also be designed, installed and managed in compliance with OIS regulations. The owner/operator of AST with a capacity of less than 660 gallons should equip tanks with impervious secondary containment and develop the following:

- A spill prevention, spill control and a spill countermeasures plan
- A method to prevent overfilling
- A method to prevent flotation of the tank and to protect it from periodic flooding
- A method to prevent spills during transfer operations

Most vehicle fluids are, by nature, hazardous. If improperly managed, they can contaminate soils or surface and groundwater, or create health and fire hazards. Waste fluids from motor sport vehicles or service vehicles used at the golf course or other facilities in the development should be managed in the following manner:

- Collect and recycle waste petroleum-based fluids, including used oil, transmission and brake fluids.

- Collect and recycle waste coolants from radiators.
- Place the collected fluids in Department of Transportation (DOT) approved waste receptacles. Recycle these fluids whenever possible.
- Use absorbents to clean up fluid leaks and spills which occur during vehicle preparation or releases on the racetracks.
- Also place absorbents, rags, etc. used to clean up spills in DOT approved receptacles and dispose of them in accordance with applicable federal, state and local waste regulations.

Leaking and spilled fluids from damaged vehicles are another potential cause of surface and groundwater contamination. To prevent this, we recommend the following:

- If a vehicle has a leak that cannot be repaired, completely drain the fluid from the vehicle.
- Conduct repair and/or fluid drainage operations over an impervious area; e.g., concrete slab with curbs, where spills and leaks can be contained and will not infiltrate the ground.
- The applicant should develop a spill response plan to recover and either recycle or properly dispose of waste automotive fluids.

### **Food Service Uses**

The office, commercial, retail and recreational activities planned for WorldPark will include many food services. Tri-County Health Department is required to review and approve plans for all retail food establishments before they open for business. Plans should be submitted to Alan Bollig, in our Belleview Office. He can be reached at 303 846-6230. To facilitate the plan review, we encourage retail food facility operators to contact Mr. Bollig to receive a specifications packet and to submit their plans as early as possible in the development process.

We recommend that Arapahoe County require retail food establishments to obtain Tri-County's approval of their plans prior to issuing them a building permit.

Tri-County Health Department must also review temporary retail food establishments to ensure their compliance with Colorado sanitation regulations. These establishments must receive Tri-County's approval no later than two weeks before the date of the proposed service. Temporary retail food operators should contact Chuck Henry, at our Belleview Office, at 303 846-6212 for information on requirements.

### **Water Conservation**

Because water is a scarce resource in the Metro area, Tri-County recommends that projects be designed from the outset to maximize the efficient use of water. In the long run, designing water conservation practices into development will preserve as much water as possible for essential uses such as drinking and hygiene. We recommend a combined program of irrigation limitations and incentives for developers and others to reduce the amount of water used in landscaping. For example,

- Reduce the area of irrigated landscaping in site plans and ensure that soils in irrigated areas are amended, as necessary, to improve their tilth;
- Use native or other drought-tolerant plant species in public, landscaped areas;

- Utilize state-of-the-art design for golf courses in arid climates to reduce the amount of acreage that must be irrigated or to reduce the water demand per acre of irrigated land on the golf course.
- If possible, utilize treated wastewater to maintain the landscaped areas of the golf course.

### **Golf Course**

To protect surface water quality during the construction and operation of golf courses, the Denver Regional Council of Governments (DRCOG), in cooperation with Wright Water Engineers, developed guidance entitled, "Guidelines for Water Quality Enhancement at Golf Courses Through the Use of Best Management Practices". A summary of the document is attached to these comments. We encourage the developer to commit to following this guidance in developing the WorldPark golf course. The full document is available from Russ Clayshulte, at DRCOG, who can be reached at 303 455-1000.

If you have any questions or need additional clarification about our comments, please feel free to contact me at 303 846-6232.

Sincerely,

Carol Maclennan  
Environmental Health Policy Coordinator

Cc: Ken Barber, TCHD, Aurora  
Lynn Robbio Wagner, TCHD, Commerce City  
Alan Bollig, TCHD, Belleview  
Chuck Henry, TCHD, Belleview

Attachments