

SIZE OF PARKING SPACES IN REDESIGNED ZOO PARKING LOT

January 2, 2017



Sierra Club has done a careful analysis of the size of parking spaces planned for the new Memphis Zoo parking lot. Based on this analysis, there are 15 factors which support maintaining the existing 9' x 19' parking space size, and no real justification for increasing the spaces to 10' x 20' (the size specified in the City Council's July 19 resolution).

The 15 factors are listed briefly here, and detailed in the Appendix:

1. 75% of the cars parked in Zoo lots are small or medium-sized cars.
2. The existing 9' x 19' spaces are large enough to accommodate all cars which visit the Zoo, even extra large cars.
3. The City Council's resolution would cause the new Zoo parking to take 11% more space than needed.
4. The City Council's resolution needs 1.14 extra acres just to address the larger parking space size.
5. The 10' x 20' parking spaces at Tiger Lane accommodate tailgating- not a common practice at the Zoo.
6. Parking spaces at other tourist venues around the city are smaller than 10' x 20'.
7. There is no public "uproar" or even a quiet plea insisting that Zoo parking spaces be larger.
8. The Memphis & Shelby County UDC, defines spaces to be 9' x 18' minimum but allows smaller for compact cars.
9. Given the distribution of vehicle sizes at the Zoo, it may even be worth considering a section for smaller cars.
10. The Traffic Engineering Handbook, 5th edition, specifies a "minimum size" of parking spaces, but emphasizes that sizes should be based on the nature of the usage (type of activity) and the physical environment (space available and constraints).
11. The City, Zoo, OPC and the community should work together to meet the parking need, but also to protect the Greensward. Specifications which increase the total acreage unnecessarily are in conflict with this objective.
12. Encroachment into the Greensward is the root cause of the current problem. This project should make every effort to avoid a solution which encroaches. "Appropriately-sized" parking spaces help to meet the objective.
13. With the coming "invasion" of autonomous cars, many people will be dropped off, thus, reducing the need for prime parking spaces near the Zoo's front entrance.
14. Philosophy & Economics- "Land is not free". The tightly constrained land in the Park and near the Zoo means that every fraction of an acre must be carefully metered out.
15. "The High Cost of Free Parking" (Shoup, Donald; American Planning Association; 2011) clearly recommends a shift from minimum parking requirements to parking prices which are used to control demand, and encourage other modes of travel.

Based on this overwhelming array of facts, it seems hard to justify larger parking spaces which would take over 1 acre of valuable space from a beloved community resource- Overton Park- to give that space to another community resource- the Zoo.

I ask that the Committee ensure that the Consultants chosen to develop the parking lot's layout plan be instructed to create two layouts- one with 10' x 20' spaces, and the other with 9' x 19' spaces. The value of the information that would be provided is huge in comparison to the small incremental cost.

Thanking you for your consideration,

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Why 10' x 20' parking spaces are not necessary in the restriping of the Memphis Zoo parking lot

1. 75% of the cars parked in Zoo lots are small or medium-sized cars. The Car Counting Crew on two Saturdays and two Tuesdays in September 2016, and showed that only about 25.3% of cars are of a size considered to be large, while 50.0% were medium-sized and 24.7% were small.
2. Looking at the sizes of actual vehicles, the existing 9' x 19' parking spaces are plenty large enough to satisfactorily accommodate virtually all of the cars which visit the Zoo, and most cars fit quite easily. Even the largest "regular" vehicles can fit in 9'x19' with room to spare. (A Hummer H2 is 6' 9" x 15' 10"; a Chevy Tahoe is 6' 8" x 17'; a Ford F150 is 6' 8" x 17' 5".) Note that these three mentioned vehicles are "extra large", and only represent a small portion of the "large" grouping that was counted. If the Zoo desires, a small section for extra-large vehicles could be created near the far northeast corner of the lot. Alternatively, some have suggested that extra large vehicles should be directed to spaces on N.Parkway, which have the benefit of extra width.
3. The City Council's resolution calls for parking spaces to be 10' x 20', with a 22' aisle. This causes the Zoo's parking lot to take up 11% more space than the existing lot with 9' x 19' spaces and 24' aisle. This is an unnecessary increase in land required. (In the current lot, you can fit 20 cars in an area 62' x 90' – that's 10 spaces on each side of the 24' aisle. But with 10' x 20' parking spaces, you only get 18 cars in that same area. Thus, it increases the area required for a certain number of spaces by 11%.)
4. Land used- The existing Zoo parking lots take approximately 6.94 acres (867 spaces at 125 cars per acre). Adding 415 spaces at 9' x 19' for each space adds 3.32 acres for a total of 10.26 acres. When the size of all spaces is increased to 10' x 20' (with 22' aisle width), you will need 11.40 acres. Thus, an additional 1.14 acres is needed just to meet the increased parking space size. Additionally, it is important to note that even more acres will be needed because the plot plan would now have to add space to work around the existing Magnolias. (Note- these numbers provide accurate relative comparisons based on calculations rather than using surveyor's layouts.)
5. The 10' x 20' parking space size which is used at Tiger Lane is not a good model for the Zoo's parking lot because the usage is different. Tiger Lane's parking spaces are intended to accommodate tailgating, a major activity at college & pro football games. The Zoo's parking lot does not need to accommodate tailgating.
6. Parking spaces at other tourist venues around the city are smaller than 10' x 20':

Civil Rights Museum main lot	9' x 19' w/ 30° angle
Civil Rights Museum 2nd lot	9' x 19'
Shelby Farms Park	9' x 19'
Bass Pro (Pyramid)	9' x 19' (miscellaneous larger spots away from building)
Pink Palace	9' x 18'2" or 9'2" x 18'6"
Kroc Center	8'10" x 17'10" or 9' x 18'3"
Children's Museum	9' x 17' or 10' x 17' (varies)
Tiger Lane	10' x 20' – sized to accommodate tailgating; NOT needed at the Zoo
Tom Lee Park	10' x 20' – sized to accommodate loading/unloading at Barbecue Festival and other Memphis in May events
7. Changing the size of each parking space is an attempt to solve a problem which doesn't exist. There is no public "uproar" or even a quiet plea to make parking spaces larger. There is no evidence that the public wants larger parking spaces. Thus, there is no need to change the sizes of the individual parking spaces.
8. The Memphis and Shelby County Unified Development Code, section 4.5.5, page 177, defines Minimum Stall Width as 9 feet, and Minimum Stall Depth as 18 feet. The UDC also states "stall width and stall depth may be reduced [emphasis added] for compact vehicles." (<http://www.shelbycountyttn.gov/DocumentCenter/View/22306>)
9. Given the distribution of vehicles which currently visit the Zoo's parking, and since small cars account for 25% of vehicles, it may be worth considering a section for smaller cars. The UDC Code allows for this.
10. The Traffic Engineering Handbook, 5th edition, published by the Institute of Transportation Engineers, states that parking spaces should be 9 foot minimum width and 18-19 feet length. This handbook also indicates that the size of spaces should be decided based on the normal use of the spaces- for example, spaces that have frequent ins and outs, like grocery stores, need to be larger than spaces that have less turnover.

11. The City, the Zoo, the OPC and the community are working together to meet the agreed number of parking spaces, but the size of spaces should be based on standards, reasonable analysis, and protection of the Greensward as much as possible. In the tightly constrained space available, every effort should be made to squeeze the needed number of spaces into the smallest area possible. Specifications which increase the total acreage used unnecessarily conflict with this objective.

12. Encroachment into the Greensward is the root cause of the current problem. One of the objectives of this effort is to avoid encroaching on the Greensward if at all possible. This project should make every effort to avoid a solution which encroaches. Making sure that parking spaces are “appropriately-sized” to match typical usage will help to meet the objective.

13. With the coming “invasion” of autonomous cars, many people will be dropped off at the Zoo, and then the car will go away, to serve some other trip, or maybe just to park in a remote lot (where they would expertly park in smaller parking spaces.) Thus, less parking spaces will be needed by the Zoo and many other venues. It does not make sense to expand the Zoo's parking lot beyond what is needed and appropriate today, only to have large portions of the lot lie “fallow” in the future when autonomous cars begin to take over.

14. Philosophy & Economics- “Land is not free, and when is used without careful regard to its cost, it gives the sense that the land itself is not important.” Especially in an area of land as tightly constrained as the space near the Zoo's parking lots, every fraction of an acre must be carefully metered out.

15. “The High Cost of Free Parking”; Shoup, Donald; American Planning Association; 2011.

“Diverse interests from across the political spectrum can for different reasons support a shift from minimum parking requirements to performance parking prices. Liberals will see that it increases public spending. Conservatives will see that it reduces government regulation. Environmentalists will see that it reduces energy consumption, air pollution, and carbon emissions. Businesses will see that it unburdens enterprise. New urbanists will see that it enables people to live at high density without being overrun by cars. Libertarians will see that it increases the opportunities for individual choice. Developers will see that it reduces building costs. Neighborhood activists will see that it devolves public decisions to the local level. Local elected officials will see that it reduces traffic congestion, encourages infill redevelopment, and pays for local public services without raising taxes. The current system of planning for parking does such widespread harm that the right reforms can benefit almost everyone.”

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