City of Carlsbad Tyler St. and Chestnut Ave. Eucalyptus Risk Assessment Report

Prepared for City of Carlsbad c/o Morgan Rockdale 1166 Carlsbad Village Dr. Carlsbad, CA 92008

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Table of Contents

Summary	Page 3
Background	Page 4
Observations and Discussion	Page 5
Tree Risk Assessment Methodology	Page 7
Risk Mitigation	Page 10
Glossary	Page 11
Limitations	Page 13
Conclusion	Page 14
Photos and Figures	Page 15

Summary

I assessed the risk posed by one sugar gum tree (*Eucalyptus cladocalyx*) growing at the corner of Tyler Street and Chestnut Aveneue in the City of Carlsbad, California. I performed a ground-based all-visual inspection of the subject tree on March 24, 2022 at 9:00am. I only assessed the tree parts and targets that I have identified in this report. No other tree parts or targets were assessed as part of this scope of work.

I concluded that the overall risk rating for the subject tree within the next one year time frame is *high* because of the presence of a 6" dead branch hanging in the upper canopy. However, if the dead branch is pruned off, then the tree's overall residual risk rating will be reduced to *low*.

The basic premise of a tree risk assessment is to help tree risk managers make an educated decision on how to reduce their risk to tolerable levels. All trees provide benefits, and all trees pose some risk. Usually, the benefits provided by trees outweigh the risks they pose. The only way to eliminate all tree risk is to eliminate all trees.

Background

One eucalyptus tree at the corner of Chestnut Avenue and Tyler Street is the subject of this report. On multiple occasions, this tree was brought to the City's attention by a resident of an adjacent property who requested the City remove the tree.

The City has contracted tree maintenance responsibilities with West Coast Arborists ("WCA") since 2004. In 2022, WCA was scheduled to perform regular maintenance pruning on this tree. Shortly before it began work, it discovered an active bird nest in the canopy. Work was rescheduled to avoid nesting season.

Tree supervisor Morgan Rockdale asked me to inspect the subject tree and to prepare a risk assessment report. The goal of the inspection was to address the concerns raised by the resident and to determine whether the level of risk posed was sufficient to act notwithstanding the presence of the active nest. I performed a Level 2 ground-based all-visual inspection of tree on March 24, 2022, and I summarized my findings in this report.

Observations and Discussion

I visited the subject property on March 24, 2022 at 9:00am to collect data for this report. I met with Mr. Rockdale who showed me the subject tree and provided background information.

A large sugar gum tree (*Eucalyptus cladocalyx*) is growing along the southeastern side of Chestnut Avenue at Tyler Street in the City of Carlsbad, California. It is approximately 74 feet tall and has a diameter at breast height ("DBH") of approximately 46 inches.

Trunk

The most notable feature of the tree is its prevailing lean to the northeast, parallel to Chestnut Avenue. There is a normal root crown flare, and the adjacent sidewalk was re-configured to allow space for the tree's root crown over time. The tree is growing in an irrigated lawn, but I did not observe any evidence of decay at the base of the tree. I did not observe any soil heaving, cracking, or separation that would indicate the tree's angle of lean changed recently. In Google Street View imagery, I observed the tree had a similar angle of lean since June of 2008.

Three panels of the adjacent sidewalk appear to have been replaced between 2008 and 2009. Since then, the tree roots have lifted the replacement panels. More recently, the city has performed concrete grinding work at the joints to mitigate the resulting vertical displacement. The sidewalk lifting is evidence that the tree's roots are still actively growing beneath the sidewalk.

Despite the tree's prevailing lean, I observed no evidence of structural defects that would support an inference that the tree's likelihood of failure was elevated. I rated the likelihood of whole tree failure within the next one year time frame as *improbable*.

20-Inch Scaffold Branch

Approximately 9 feet up its main trunk is a large scaffold branch approximately 20 inches in diameter that leans out to the northeast, parallel to the tree's prevailing lean. On the eastern side of the tree, I observed an old wound at this scaffold branch union. It appeared there was some decay at this union, but the amount was obscured by sloughing bark. I did not probe the wound within the scope of my ground-based all-visual inspection.

Around the perimeter of the wound at the scaffold branch union was a layer of woundwood that appeared to be at least 10 years old. This woundwood indicates two things: (1) the wound has been present for many years, and (2) the tree's structural integrity has been reinforced by the deposition of new tissue over this time period. The presence of decay at the union of a large scaffold branch with cantilevered end weight led me to conclude that the likelihood of the scaffold branch failing within the next one year time frame was *possible*.

6-Inch Dead Broken Branch

Approximately 60 feet above Chestnut Avenue is a dead broken branch approximately 6 inches in diameter. It has already partially failed, and it is leaning against an adjacent branch. This branch has an *imminent* likelihood of failure. I recommend pruning it off to reduce the risk to people and property.

Species Failure Profile

The subject tree is a *Eucalyptus* species. *Eucalyptus* species are known for their species failure profile of dropping branches, even in the absence of defects. Failure of defect-free branches tends to occur in high wind events or in the afternoon of hot summer days. The mere fact of this tree's species is sufficient to justify an elevated likelihood of failure rating for its branches, even where no specific structural defect is identified. However, just because a tree or one of its parts has an elevated likelihood of failure doesn't mean that a remedial action must be taken. In addition to the specific tree parts I assessed, I also assessed the likelihood of a branch 8 inches or larger failing due to the tree's species failure profile. The likelihood that a branch 8 inches or larger will fail from this tree within the next one year time frame is *possible*.

Potential Targets

Along Chestnut Avenue are parking spaces that are nearly always occupied by parked vehicles belonging to local residents and users of the nearby bike trail. Across the street from the tree are distribution power lines maintained by SDG&E. Approximately 7 feet to the southwest of the tree, one power pole supports lines that are connected to the distribution lines across the street.

To the east of the tree is a single family home. The driveway to the home runs underneath the tree's prevailing lean past some understory plants and succulents.

Tree Risk Assessment Methodology

There are three components to a tree risk assessment: likelihood of failure, likelihood of impact, and consequences of failure and impact. For each combination of tree part and target, I rated each of these components. Then I combined them according to International Society of Arboriculture (ISA) Best Management Practices for tree risk assessment using the tables in Figures 1 and 2 to produce a risk rating for each tree part and target combination in Figure 3. Lastly, I assigned an overall risk rating for the subject tree equal to the risk rating of the tree part and target combination with the highest risk rating.

Targets

I assessed the risk posed by the subject tree to the following targets. No other targets were assessed as part of the scope of this assignment.

- *Pedestrians Walking Along Sidewalk*: Pedestrians are mobile targets. They are only present within the target zone infrequently or irregularly, so their occupancy rate is *occasional*. If either a branch or the whole tree were to fail, there is a *low* likelihood of striking a pedestrian due to the lower occupancy rate. If one of the assessed tree parts were to strike a person, the consequences would be *severe*.
- *Vehicles Traveling Along the Street*: Vehicles traveling on the street are mobile targets. They are present on Chestnut Avenue within the target zone infrequently or irregularly, so their occupancy rate is *occasional*. If either a branch or the whole tree were to fail, there is a *low* likelihood of striking a moving vehicle on Chestnut Avenue. If the tree or a branch were to strike a moving vehicle, the consequences would be *severe*.
- *Parked Vehicles*: Parked vehicles are moveable targets because they are stationary but can be relocated. Vehicles are almost always parked along the street below the tree, so I assigned them an occupancy rate of *constant*. However, there is a small no-parking zone next to an adjacent fire hydrant, so the occupancy rate of vehicles within the target zone of the 20" scaffold branch and the 6" dead branch is *frequent*. If one of the assessed tree parts were to strike a parked vehicle, the consequences would be *significant*.

There is a *medium* likelihood of a branch striking a parked vehicle because impact could occur, but it is not expected. However, the likelihood of the whole tree striking a vehicle is *high* because there are nearly always parked vehicles within its target zone.

- *Power Lines and Telecommunication Lines*: Utility lines are fixed targets that cannot be feasibly relocated to reduce risk posed by the tree. They are always present, so they have a *constant* occupancy rate. The lines to the northwest of the tree are across the street, approximately 50 feet away. However, if the tree were to fail in the direction of its prevailing lean, the lines are approximately 75 feet away, as measured along the line of the tree's most likely direction of fall.

If whole-tree failure were to occur, there is a *slight chance* that the top of the tree could impact the lines, so there is a *low* likelihood of striking the lines. If the 20" scaffold branch or the 6" dead branch were to fail, there is a *very low* likelihood of impacting the lines to the north because the lines are not in the target zones of these branches. However, there is a *medium* likelihood of an 8" branch striking the lines immediately to the southwest of the tree if a branch were to fail. If impact with the lines to occur, the consequences would be *significant*.

- *Blocked Street or Driveway*: Even if a vehicle is not impacted, traffic flow along Chestnut Avenue may still be disrupted by failure of the tree or one of its parts. If the whole tree or the 20" scaffold branch were to fall across the street, the consequences of blocking traffic would be *significant*. However, the likelihood of the 20" scaffold branch blocking street traffic is *low* because its most likely direction of fall would be roughly parallel to the street. The consequence of the 6" dead branch or an 8" branch blocking traffic would be *negligible* because it would be relatively easy to move a small branch out of the street.

The consequence of a large failed tree part blocking the adjacent private driveway would be *minor*. The consequence of one of the smaller branches blocking driveway traffic would be *negligible*.

- Understory Plants: Understory plants are a fixed target with a *constant* occupancy rate. However, if they were to be impacted, the consequences would be *minor*. If the 20" scaffold branch were to fail, it has a *high* likelihood of impacting the plants. If the 6" dead branch were to fail, there is a *low* likelihood of impacting the plants because they are at the edge of its target zone. If an 8" branch were to fail, it may impact the plants, but impact is not expected, so the likelihood of impacting the plants is *medium*.
- *Residential House to the East*: The closest corner of the residential structure to the east is approximately 54 feet from the tree. If the whole tree were to fail, it may impact the house, but impact is not expected because the house is at the edge of the estimated target zone. There is also a significant chance that the tree would fail parallel to the street and not strike the house. Thus, I rated the likelihood of the whole tree striking the home as *medium*.

The house is at the edge of the drip line of the tree, so there is a *low* likelihood of it being struck by an 8" branch and a *very low* likelihood of it being struck by the 6" dead branch. The 20" scaffold branch also has a *low* likelihood of striking the house because its most likely direction of fall is approximately aligned with the whole tree's most likely direction of fall, and the house is at the edge of the estimated target zone.

Tree Parts

I assessed only the following parts for likelihood of failure. No other tree parts were assessed as part of the scope of this assignment.

- *Whole Tree Failure*: The likelihood the whole tree failing within the next one year time frame is *improbable*. Even though the tree has a prevailing lean, I did not observe any evidence of compromised structural integrity of the roots or root crown. The roots are actively growing and are lifting the replaced sidewalk panels. I did not observe soil cracking or lifting, and I did not observe a recent change in the tree's angle of lean. The mere fact of a prevailing lean is insufficient to conclude that the tree has an elevated likelihood of failure.
- 20-Inch Scaffold Branch Failure: The likelihood of the 20-inch scaffold branch failing due to its cavity is *possible*. Although there is a significant area of decay, the response growth woundwood partially offsets this strength loss.
- 6-Inch Dead Branch Failure: The likelihood of the 6-inch dead hanging branch failing is *imminent*. Failure has already partially occurred, and the branch is resting against a neighboring branch. I recommend pruning off this dead broken branch.
- *Failure of Any Branch 8 Inches or Larger Due to Species Failure Profile*: The subject tree is a *Eucalyptus* species, which is known for its tendency to drop branches even in the absence of defects. I rated this tree as having a *possible* likelihood of dropping a branch 8 inches or larger within the next one year time frame due to its species failure profile.

Risk Rating

For all combinations of target and tree part (Figure 3), I combined the likelihood of failure, likelihood of impact, and consequences of failure and impact using the risk rating matrices in Figures 1 and 2.

The risk posed by the 6" hanging dead branch causing property damage of parked vehicles is *high*. The risk posed by the 6" hanging dead branch to pedestrians and cars driving on Chestnut Avenue is *moderate*. All other risk permutations resulted in a low risk. If the 6" hanging dead branch were pruned off, then the overall residual risk rating of the tree would be *low*.

Risk Mitigation

As a risk assessor, my job is to present options for risk mitigation. The property owner or manager's responsibility is to choose one or more that meets the budget and level of risk tolerance. Each mitigation option will have residual risk unless the tree is completely removed:

- 1) *Remove the 6" Hanging Dead Branch*: The risk posed by the hanging dead branch to parked vehicles is *high*, and the risk posed to driving vehicles and pedestrians is *moderate*. By pruning off this branch, the overall residual risk of the tree would be reduced to *low*. I recommend pruning this dead branch at the earliest reasonable time, taking reasonable care to cause the minimum disturbance to the active bird nest in the tree.
- 2) Perform an Additional Level of Assessment: I only performed an all-visual Level 2 Basic Tree Risk Assessment. A Level 3 Advanced Tree Risk Assessment could potentially provide additional information that could help the tree risk manager decide how to proceed. Such additional testing could include but is not limited to a climbing inspection of the upper scaffold branches, decay assessment of the heartwood of the tree such as sonic tomography or resistance drilling, or a static pull test to measure the change in angle of lean resulting from a precise applied force. Additional testing could provide data that would either confirm this risk assessment or change the likelihood of failure ratings with new information. The disadvantage to a Level 3 Advanced Assessment is the significantly higher cost. At a minimum, I recommend performing an aerial inspection of the tree when the 6" dead branch is removed.
- 3) *Retain and Monitor*: Every year, hire a Qualified Tree Risk Assessor (TRAQ) to re-assess the risk ratings of this tree. If the risk posed is greater than the City's risk tolerance threshold, then alternative mitigation actions may be discussed. Pruning or other action may not be necessary every year, but I recommend that a risk assessor perform an inspection annually to look for any potential change in the tree's condition.
- 4) *Remove the Tree*: Removing the tree would reduce its risk to *zero*. It would also eliminate the benefits provided by the tree. If the residual risk posed by the tree after pruning off the dead 6" broken branch is still not tolerable, then this would be the only management option that would eliminate the risk posed because there is no residual risk rating lower than *low* if the tree remains standing.
- 5) *Canopy Thinning*: If the canopy of the subject tree is pruned to reduce foliage density, the risk rating would not change at this time. The only elevated level of risk is the risk posed by the 6" dead branch, and the residual risk after pruning off the dead branch would be *low*. Further pruning cannot reduce a *low* risk to a lower risk rating because the only other risk rating lower than *low* is *zero*. A risk rating of *zero* can only be achieved by tree removal.

Glossary of Terms

Consequences of impact: The amount of damage or harm caused by a tree or tree part failing and impacting a target. It may be personal injury, property damage, or disruption of an activity. There are four possible ratings:

- 1) Severe: Hospitalization or death of a person, or extensive property damage.
- 2) **Significant**: Personal injury that requires professional medical care, or substantial property damage.
- 3) **Minor**: Very minor personal injury, or property damage that can be easily repaired or replaced.
- 4) Negligible: Inconsequential property damage. No personal injury.

Extreme Weather: Based on the 30-year historical average weather for the site, extreme weather is uncommon weather events that fall outside the range of storms and wind ordinarily expected to occur within the time frame.

Likelihood of failure: The chance that a tree or tree part could fall within a specified time frame. There are four possible ratings:

- 1) **Imminent**: Without regard to the assessed time frame, the tree or tree part has already started to fail or is likely to fail in the near future under normal weather conditions.
- 2) **Probable**: Within the assessed time frame, the tree or tree part may be expected to fail in ordinary weather conditions.
- 3) **Possible**: Within the assessed time frame, the tree or tree part may fail in extreme weather. It is unlikely to fail in normal weather.
- 4) **Improbable**: Within the assessed time frame, the tree or tree part may not fail, even in extreme weather.

Likelihood of impact: The chance that the subject tree would impact the target if it were to fail. This is primarily determined by the occupancy rate of the targets, the direction of the tree's fall, and any potential protection factors. There are four possible ratings:

- 1) **High**: If the tree or tree part were to fail, it is likely to impact the target.
- 2) **Medium**: If the tree or tree part were to fail, it may impact the target, but it is not expected to do so.
- 3) Low: If the tree or tree part were to fail, there would be a slight chance of impacting the target.
- 4) Very Low: If the tree or tree part were to fail, the chance of impacting the target is remote.

Mobile target:	A target that is constantly moving or stopping intermittently. Such targets include people, animals, bicycles, and vehicles.				
Movable target:	A target that may be relocated as a mitigation strategy.				
Normal weather:	Based on the 30-year historical average of weather for a given location, including all ordinary storms and wind that may be expected to occur within a given time frame.				
Occupancy rate:	The amount of time that a mobile target is present in the target zone. There are four possible ratings:				
Risk Rating.	 Constant: Within the assessed time frame, the target is always or nearly always present in the target zone. Frequent: Within the assessed time frame, the target is present in the target zone for a large portion of the day, month, week, or year. Occasional: Within the assessed time frame, the target is infrequently or intermittently present in the target zone. Rare: Within the assessed time frame, the target is present in the target zone for a very small portion of time. 				
Kisk Kating.	 Extreme: access to the target zone should be restricted immediately and mitigation should take place as soon as possible. High: mitigation should take place as soon as practical. Moderate: mitigation should take place as soon as pruning cycle allows. Low: The risk may be mitigated as pruning cycle allows, or the tree may be retained and monitored. 				
Static Target:	A target that does not move. It is present 24 hours per day, seven days per week. Building and landscape fixtures are considered fixed or static targets.				
Target:	A person that could be injured, property being damaged, or activities that could be disrupted by a failure of a tree or tree part.				
Target zone:	The area in which a tree or tree part can reasonably be expected to fall if it were to fail.				
Time frame:	The period of time over which the likelihood of failure is assessed. Time frame is often one year, but it may be modified to meet the needs of the client. For this assignment, I used a time frame of one year.				

Limitations

I relied upon information provided to me regarding the site and the subject tree. For purposes of this report, I assumed all of the information I was provided to be true. If any of the information provided to me is found to be inaccurate, the conclusions in this report may be invalidated.

My observations are based on a strictly visual inspection of the property, and some hidden or buried symptoms and signs may not have been observed. I did not conduct excavation, coring, or aerial inspection to make observations. Specialty arborists would be needed to conduct root crown inspections and extent-of-decay analysis on the tree, if these additional inspections are desired.

Although the condition of the tree will change throughout the year, my analysis is only based on the observations I gathered at the time of inspection. I do not guarantee the safety, health, or condition of the tree. There is no warranty or guarantee, expressed or implied, that problems or deficiencies in the tree may not arise in the future.

Arborists are tree specialists who use their knowledge, education, training, and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living trees. Clients may choose to accept or disregard the recommendations of the arborist, or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to structural failure of a tree. Trees are living organisms that fail in ways not fully understood. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like any medicine, cannot be guaranteed.

Treatment, pruning, and removal of trees may involve considerations beyond the scope of the arborist's services such as property boundaries, property ownership, locations of surveyed landmarks, and disputes between neighbors. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the arborist. An arborist should be expected to reasonably rely upon the completeness and accuracy of the information provided.

Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.

Conclusion

The overall risk rating for the subject tree is *high* over the next one year time frame due to the risk posed by the 6" dead broken branch to parked vehicles. The residual risk that would be posed if this dead branch were pruned off would be *low*.

Evaluate the risk/benefit tradeoff before considering the subject tree for removal or any further management actions. If the tree is retained in the landscape, I recommend a Qualified Tree Risk Assessor annually re-inspect it.

Photos and Figures

Likelihood of Failure	Likelihood of Impacting the Target					
	Very Low	Low Medium		High		
Imminent	Unlikely	Somewhat likely	iomewhat likely Likely			
Probable	obable Unlikely L		Somewhat likely	Likely		
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely		
Improbable	o <mark>able</mark> Unlikely U		Unlikely	Unlikely		

Figure 1: Risk assessment matrix (1 of 2). This matrix synthesizes the likelihood of failure and the likelihood of impacting the target.

Likelihood of Failure & Impact	Consequences				
	Negligible Minor Signi		Significant	ificant Severe	
Very Likely	Low	Moderate	High	Extreme	
Likely	Low	Moderate	High	High	
Somewhat Likely	Low	Low	Moderate	Moderate	
Unlikely	Low	Low	Low	Low	

Figure 2: Risk assessment matrix (2 of 2). This matrix synthesizes the likelihood of failure & impact and the consequences of impact.

				Occupancy	Likelihood of	Likelihood of			
Tree	Species	Tree Part	Target	Rate	Failure	Impact	Consequences	Risk	Notes
									improbable likelihood of whole tree
1	Eucalv¤tus cladocalvx	whole tree	pedestrians	occasional	improbable	low	severe	low	failure
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,							-	improbable likelihood of whole tree
1	Eucalvotus cladocalvx	whole tree	driving cars	occasional	improbable	low	severe	low	failure
			anning cars	occusional	Improvable				improbable likelihood of whole tree
1	Eucalyntus cladocalyy	whole tree	narked cars	constant	improbable	high	significant	low	failure
-		whole tree		constant	Improbable	ingri	Significant	1011	improbable likelihood of whole tree
1	Eucaluptus cladocaluv	whole tree	blackad straat	constant	improbablo	high	cignificant	low	failuro
1	Eucuryptus ciudocuryx	whole tree	DIOCKEU SLIEEL	CONSIGNI	Improbable	i ligi i	Significant	10 W	improbable likeliheed of whole tree
1	Eucaluptus cladosaluv	whole tree	blockod drivowov	constant	improbable	high	minor	low	failura
1	Eucuryptus ciudocaryx	whole tree	DIOCKEU UNVEWAY	CONSIGNI	Improbable	nign	minor	IOW	immedele likeliheed of whole tree
1	Fuerburtue electronic				immunahahla	an a diu una		law	follows
1	Eucalyptus ciddocalyx	whole tree	understory plants	constant	Improbable	medium	minor	low	Tallure
	_ , , , , ,								Improbable likelihood of whole tree
1	Eucalyptus cladocalyx	whole tree	power lines	constant	Improbable	low	significant	low	failure
									improbable likelihood of whole tree
1	Eucalyptus cladocalyx	whole tree	house	constant	improbable	medium	significant	low	failure
		20" low scattold							
1	Eucalyptus cladocalyx	branch	pedestrians	occasional	possible	low	severe	low	occasional occupancy rate
		20" low scaffold							
1	Eucalyptus cladocalyx	branch	driving cars	occasional	possible	low	severe	low	occasional occupancy rate
		20" low scaffold							fewer parked cars in target zone due to
1	Eucalyptus cladocalyx	branch	parked cars	frequent	possible	medium	significant	low	fire hydrant
		20" low scaffold							
1	Eucalyptus cladocalyx	branch	blocked street	constant	possible	low	significant	low	direction of fall parallel to street
		20" low scaffold							
1	Eucalyptus cladocalyx	branch	blocked driveway	constant	possible	high	minor	low	direction of fall across driveway
		20" low scaffold							
1	Eucalyptus cladocalyx	branch	understory plants	constant	possible	high	minor	low	leaning over understory plants
		20" low scaffold							
1	Eucalyptus cladocalyx	branch	power lines	constant	possible	very low	significant	low	direction of fall away from lines
		20" low scaffold							
1	Eucalyptus cladocalyx	branch	house	constant	possible	low	significant	low	house at edge of target zone
		6" dead broken							
1	Eucalyptus cladocalyx	hanging branch	pedestrians	occasional	imminent	low	severe	moderate	occasional occupancy rate
		6" dead broken							
1	Eucalyptus cladocalyx	hanging branch	driving cars	occasional	imminent	low	severe	moderate	occasional occupancy rate
		6" dead broken							fewer parked cars in target zone due to
1	Eucalyptus cladocalyx	hanging branch	parked cars	frequent	imminent	medium	significant	high	fire hydrant
		6" dead broken							small branch easily moved out of street
1	Eucalyptus cladocalyx	hanging branch	blocked street	constant	imminent	medium	negligible	low	if it were to fail
	,, ,	6" dead broken					00		small branch easily moved out of
1	Eucalv¤tus cladocalvx	hanging branch	blocked driveway	constant	imminent	low	negligible	low	driveway if it were to fail
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	6" dead broken				-		-	,
1	Fucalyntus cladocalyx	hanging branch	understory plants	constant	imminent	low	minor	low	plants at edge of target zone
		6" dead broken							
1	Fucalyntus cladocalyx	hanging branch	nower lines	constant	imminent	very low	significant	low	lines not in target zone
		6" dead broken	powernies	constant		Very low	Significant		
1	Eucaluntus cladocalux	hanging branch	house	constant	imminent	venulow	minor	low	house not in target zone
1	Eucalyptus cladocalyx	8" branch	nedestrians	occasional	nossible		severe	low	
1	Eucalyptus cladocalyx	8" branch	driving cars	occasional	possible	low	severe	low	
-				occasional	possible	10 W	Severe	10 W	cars poarly always parked within drip
1									line but target zone is larger than
4	Eucaluptus dadasah	9" branch	parked care	constant	possible	modium	cignificant	low	nne, but target zone is larger tildi
	Eucalyptus cladocalyx		parked cars	constant	possible	meaium	significant	IUW	parking area
	Fundamenta da de est		his shad store at	a a materiat	n e coibl -	an a diwar	n a gli gi bi -	law	smail branch easily moved out of street
	Eucalyptus cladocalyx	o pranch	DIOCKED STREET	constant	possible	meaium	negligible	IOW	II IL WERE TO TAIL
.	Eventual 1 1 1	011 1	blasha 1.1.1					1	small branch easily moved out of
	Eucalyptus cladocalyx	8 branch	DIOCKED DIVEWAY	constant	possible	medium	negligible	IOW	ariveway if it were to fail
1	Eucalyptus cladocalyx	8" branch	understory plants	constant	possible	medium	minor	IOW	consequences of striking plants is minor
1	Eucalyptus cladocalyx	8" branch	power lines	constant	possible	medium	significant	IOW	lines not within drip line
1	Eucalyptus cladocalyx	8" branch	house	constant	possible	low	minor	low	house not within drip line

Figure 3: Summary table of each permutation of target and tree part assessed on the subject tree.



Figure 4: Looking southwest at the subject tree. It has a prevailing lean to the northeast.



Figure 5: Three sidewalk panels were replaced near the tree between 2008 and 2009. The tree's roots continued to exert upward pressure on the panels, and the city later returned to grind the displaced joints.



Figure 6: Looking northeast. The tree has a normal root crown flare. The width of the sidewalk was adjusted to accommodate the tree's trunk.



Figure 7: There was a history of small branch failures in the canopy. Branch tearout wounds were approximately 6-8 inches in diameter. I observed woundwood around these wounds.



Figure 8: I observed a cavity at the union of the 20" scaffold branch, approximately 9 feet above the ground on the east side of the tree. There was ample woundwood around this cavity opening. I did not probe the cavity within the scope of my ground-based all-visual inspection.



Figure 9: One 6" diameter dead branch (red arrow) had already partially failed and was hanging in the canopy at the time of my site visit. It has an *imminent* likelihood of failure. I recommend pruning off this branch.