

# CHANGE TITLE

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## Abstract

ADD ABSTRACT

**Sub-question 1: Where do the highest numbers of bike thefts occur in Toronto?**

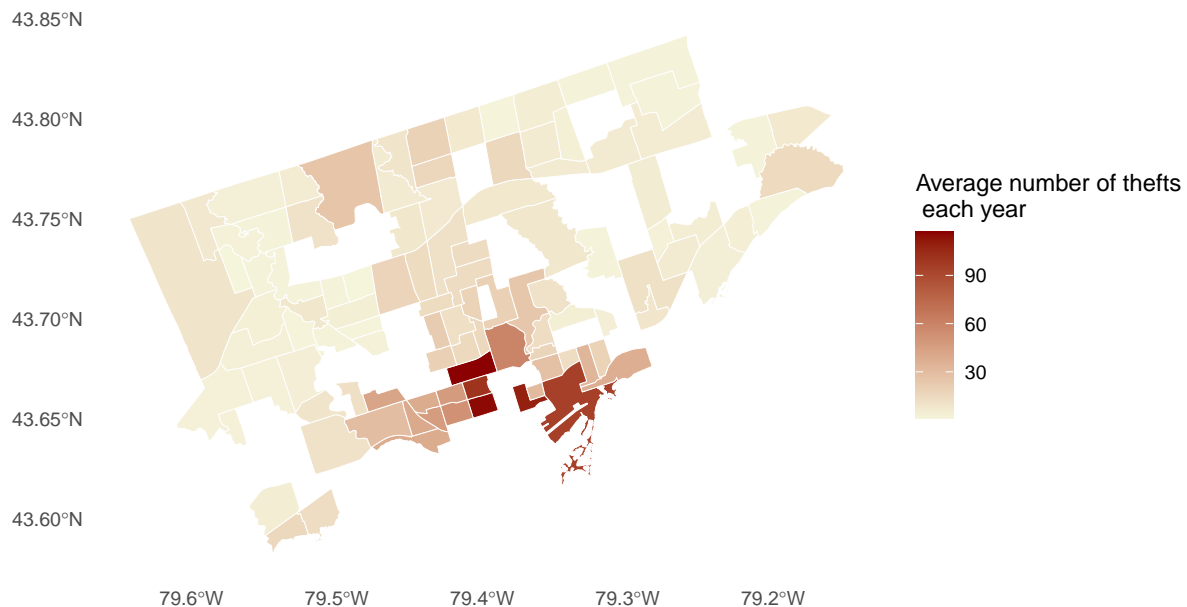


Figure 1: Average Bike Thefts in Toronto by Neighborhood

```
ggplot(toronto_thefts_rate) +  
  geom_sf(aes(fill = average_bike_thefts), color = "white", size = 0.2) + # Reduced border size  
  geom_sf(data = shape, color = "black", size = 0.5, inherit.aes = FALSE, alpha = 0.3) + # Reduced border size  
  scale_fill_gradient(low = "beige", high = "#8D021F",  
    breaks = c(100, 200, 400, 600),  
    labels = c("Low", "Moderate", "High", "Very High")) + # More descriptive breaks  
  labs(  
    fill = "Average Number of \n crimes per 100,000 \n population each year"  
  ) +  
  theme_minimal() +  
  theme(  
    legend.position = "right",
```

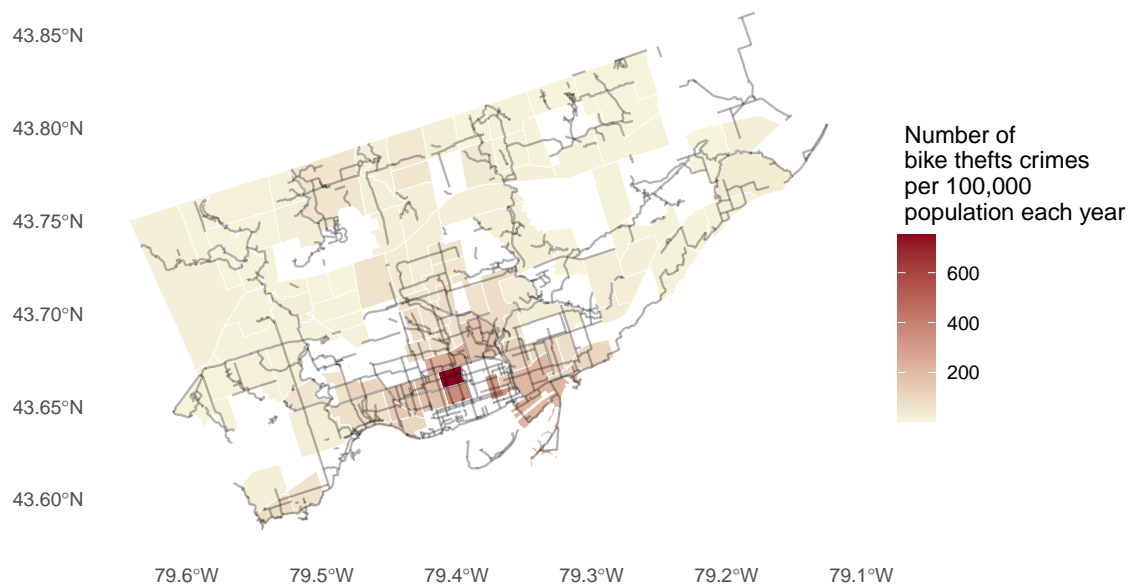
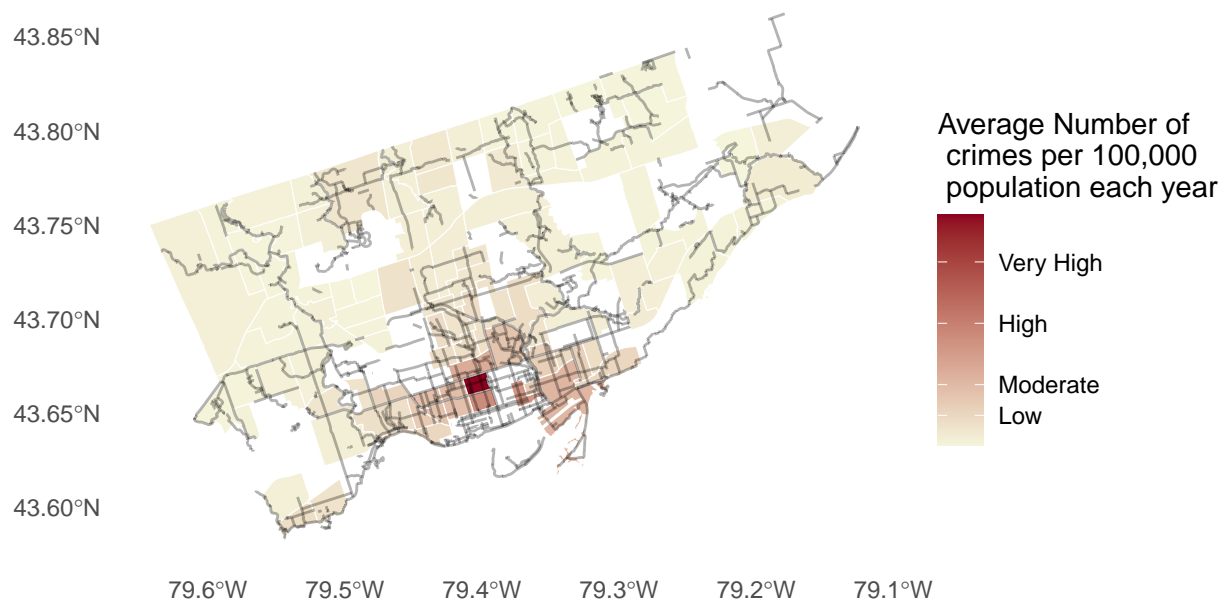


Figure 2: Bike Thefts Crime Rate and Bike Lanes in Toronto by Neighborhood

```
panel.grid.major = element_blank(),
panel.grid.minor = element_blank()) # Adjusting margin if needed
```



**Sub-question 2: Are there any time trends in bike thefts in these high-risk areas?**

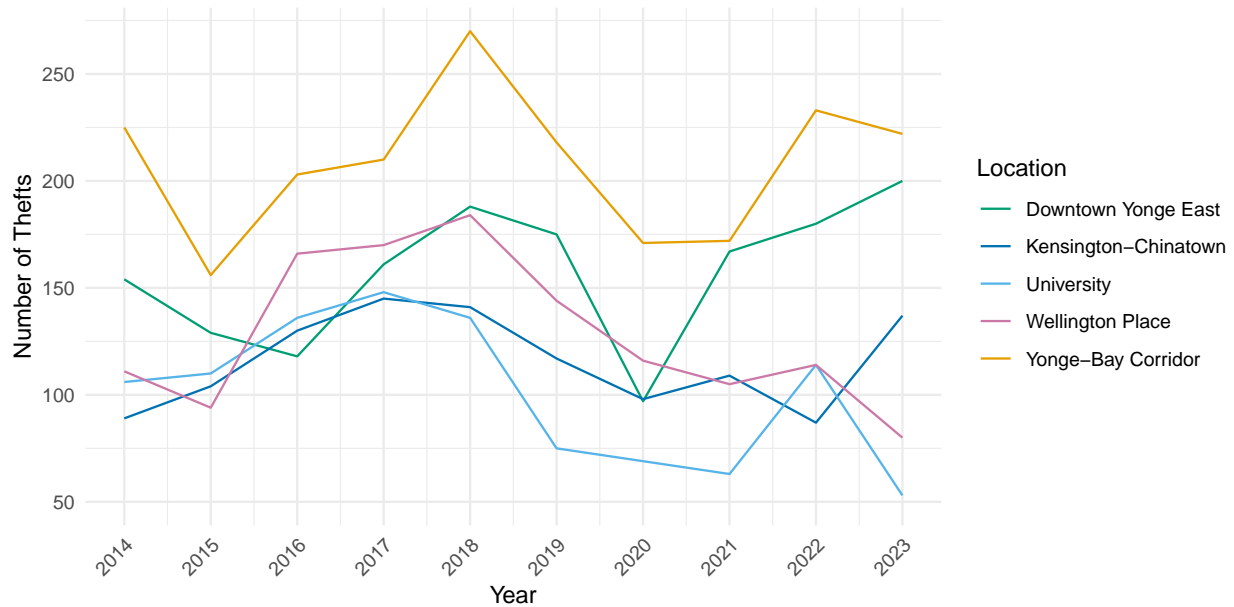


Figure 3: Trend of Bike Thefts Over Time in the Top 5 Hotspots

**Sub-question 3: How do patterns of bike thefts in Toronto vary between Private Spaces and Public Access Areas throughout the day in Toronto?**

**Sub-question 4: How does the type of area (residential, commercial, industrial) influence bike theft rates?**

**Sub-question 5: What are the cost profiles of bicycles stolen in Toronto?**

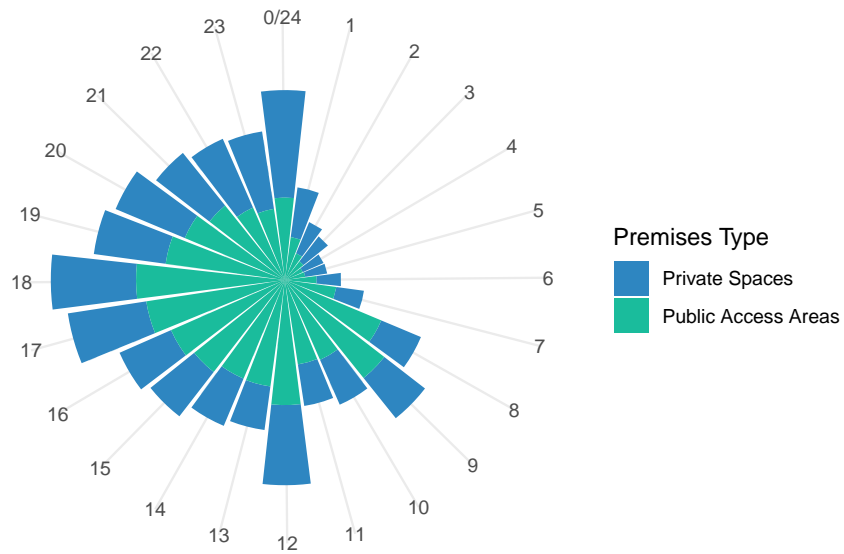


Figure 4: Bike Theft Trends by Hour (Private vs. Public Spaces)

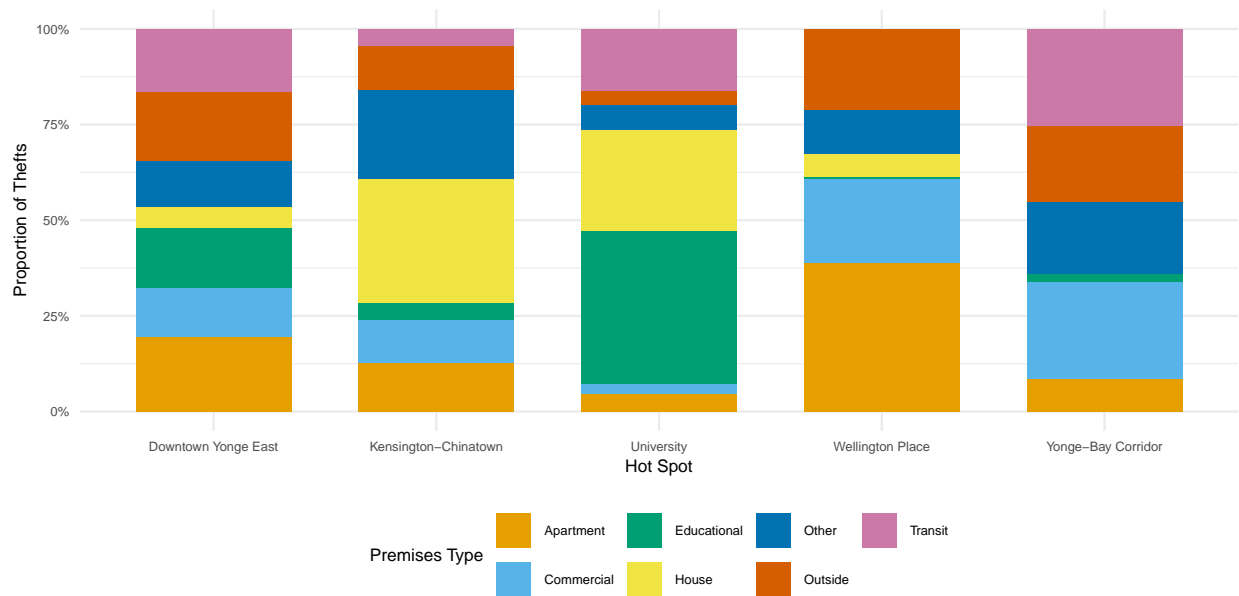


Figure 5: Proportional Distribution of Bike Thefts Across Premises Types in Toronto Top 5 Hotspots

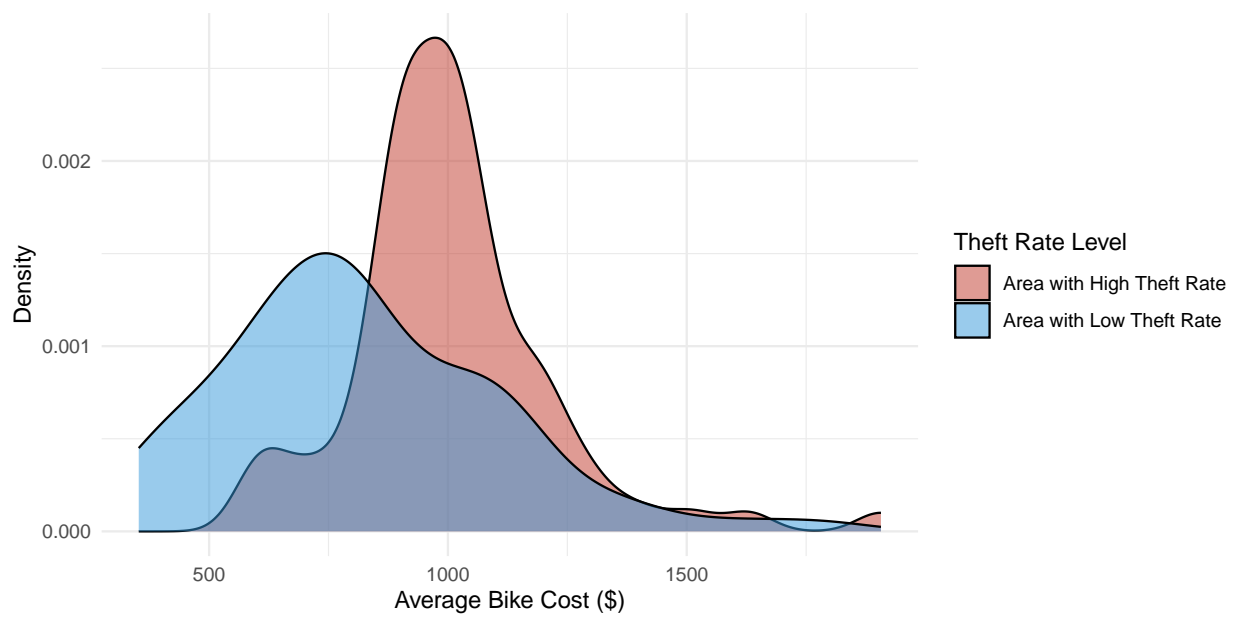


Figure 6: Comparative Density of Bicycle Costs in Areas with High and Low Theft Rates