



MarketStreet Advisory Committee

Cinema Discussion Traffic



April 26, 2018

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MARKETSTREET
LYNNFIELD



Proposal for Cinema

| | | |
|---------------|-------------------|--------------------------|
| Retail | 395,000 SF | (no change) |
| Office | 40,000 SF | (reduction of 40,000 SF) |
| <u>Cinema</u> | <u>40,000 SF</u> | |
| Total | 475,000 SF | (no change) |

Traffic Impact and Access Study

Three primary components:

- Evaluation of existing conditions
- Evaluation of future conditions 2025 without the project (No-Build)
- Evaluation of future conditions 2025 with the project in place.



Existing Condition Assessment

- Updated traffic counts were collected in November of 2017 at all study area locations
- Periods of counts:
 - 4:00 PM to 6:00PM Weekday
 - 11:00 AM to 2:00 PM Saturday
- Automatic traffic recorder counts (ATR's) also collected along Walnut Street



Study Area Intersections

Lynnfield:

- I-95 Southbound Ramps at Walnut Street and Market Street
- I-95 Northbound Ramps at Walnut Street
- Walnut Street at Salem Street
- Market Street at King Rail Drive (roundabout)
- Audubon Road at King Rail Drive

Wakefield

- Audubon Road/Pleasure Island Road at Audubon Road
- I-95 Southbound Ramps at Audubon Road/Pleasure Island Road
- Audubon Road/Pleasure Island Road at Salem Street
- I-95 Northbound Ramps at Salem Street

Study Area Intersections



**MARKETSTREET
LYNNFIELD**

ATR Summary

Table 1 Existing Traffic Volume Summary

| Location | <u>Weekday Evening Peak Hour</u> | | | | <u>Saturday Midday Peak Hour</u> | | | |
|--|----------------------------------|--------|--------------------------|----------------------------|----------------------------------|--------|-------------|------------|
| | Weekday ADT ^a | Volume | K Factor ^b | Dir. Dist. ^c | Saturday ADT ^a | Volume | K Factor | Dir. Dist. |
| Market Street west of Walnut Street | 17,600 | 1,400 | 8.0% | 51% EB | 22,400 | 2,050 | 9.2% | 52% EB |

- a. average daily traffic expressed in vehicles per day. Based on daily volumes collected in November 2017. Exact peak hours of the ATRs may not coincide with the peak hour of the TMCs.
- b. peak period volumes expressed in vehicles per hour
- c. percent of ADT that occurs during the peak period
- d. directional distribution of peak period traffic volumes

Future No-Build Condition

Future No-Build Condition considers:

- Background growth
- Other development project proposed in area
- Any intersection of roadway or intersection improvement project proposed in the area.

Future Build Condition

Future Build Condition considers:

- Project traffic generation
- Distribution of traffic in study area



Trip Generation Comparison

Phase I Trip Generation Comparison

| Peak Period | Empirical ¹ | ITE Projection ² |
|-----------------|------------------------|-----------------------------|
| Weekday Evening | | |
| Enter | 659 | 619 |
| Exit | <u>569</u> | <u>703</u> |
| Total | 1,228 | 1,322 |
| Saturday Midday | | |
| Enter | 640 | 896 |
| Exit | <u>578</u> | <u>827</u> |
| Total | 1,218 | 1,723 |



Trip Generation Comparison Office Space vs. Cinema

Table 5 Build-out Trip Generation Comparison

| Peak Period | Approved Build-out ¹ | Build-out with Proposed Modification ² | Net Increase |
|------------------------|---------------------------------|---|--------------|
| Weekday Evening | | | |
| Enter | 51 | 57 | 6 |
| Exit | <u>101</u> | <u>110</u> | <u>9</u> |
| Total | 152 | 167 | 15 |
| Saturday Midday | | | |
| Enter | 81 | 107 | 26 |
| Exit | <u>73</u> | <u>76</u> | <u>3</u> |
| Total | 154 | 183 | 29 |

1 Trip Generation estimate based on ITE LUC 710 (General Office Building) for 67,257 sf of space and ITE LUC 820 (Shopping Center) for 37,098 sf of space.

2 From Table 3.

Future Condition Operations

- The proposed project will not significantly increase traffic over that of the approved project during all critical peak hours (AM/PM/Sat midday).
- No significant change in LOS between no-build and build conditions with project.
- No significant change in delay between no-build and build conditions with project.



Adaptive Signal System with Cinema

- Assuming the cinema is approved by town Proponent proposes to fund an adaptive traffic signal system at:
 - I-95 Southbound Ramp/Walnut Street and Market Street
 - I-95 Northbound Ramp at Walnut Street
 - Walnut Street at Salem Street

What is Adaptive System

- State of the art system that allows signals to respond to fluctuations in traffic patterns (real time)
- Technology captures real time traffic demand data to adjust timing to optimize flow and coordination between locations
- Adaptive systems:
 - Reduce delay
 - Increase travel speeds
 - Improve travel times
 - Decrease travel time variability
 - Responsive to vehicles during low traffic period

What is Adaptive System

In contrast to traditional timed systems they can:

- React to traffic accidents
- Special events
- Road construction
- And other occurrences

Summary

- Project involves exchanging 40,000 sf of approved office space for 40,000 sf cinema
- Change in traffic between approved office and proposed cinema is negligible.
- No significant change in operations is expected with project.
- Assuming the cinema is approved, proponent is willing to fund an adaptive traffic signal system along Walnut Street