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DEPARTMENT OF EDUCATION,  
STATE OF HAWAI'I

BEFORE THE LAND USE COMMISSION  
OF THE STATE OF HAWAI'I

In the Matter of the Petition of

DEPARTMENT OF EDUCATION,  
STATE OF HAWAI'I,

To Amend the Agricultural Land Use  
District Boundaries into the Urban Land  
Use District for Approximately 77.2 acres  
of land at Kihei, Maui, Hawai'i, Maui Tax  
Map Key Nos. 2-2-02: 81 and 83.

DOCKET NO. A11-794

SUPPLEMENTAL EXHIBIT TO  
PETITIONER DEPARTMENT OF  
EDUCATION, STATE OF HAWAII'S  
MOTION TO AMEND THE LAND USE  
COMMISSION'S FINDINGS OF FACT,  
CONCLUSIONS OF LAW AND  
DECISION AND ORDER FILED JULY  
29, 2013; EXHIBITS "45"; CERTIFICATE  
OF SERVICE



**SUPPLEMENTAL EXHIBIT TO PETITIONER DEPARTMENT  
OF EDUCATION, STATE OF HAWAII'S MOTION TO AMEND THE  
LAND USE COMMISSION'S FINDINGS OF FACT, CONCLUSIONS  
OF LAW AND DECISION AND ORDER FILED JULY 29, 2013**

Through counsel and in further support of its Motion to Amend the Land Use Commission's Findings of Fact, Conclusions of Law and Decision and Order Filed July 29, 2013, Petitioner submits the following supplemental exhibit:

Exhibit 45      PDF file of Petitioner's PowerPoint summary.

DATED: Honolulu, Hawai'i, September 8, 2021.

/s/ Stuart N. Fujioka  
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DEPARTMENT OF EDUCATION,  
STATE OF HAWAII

# **Kihei High School LUC Docket A11-794**

**“Motion to Amend the Land Use Commission’s  
Finding of Fact, Conclusions of Law and Decision  
and Order Filed July 29, 2013”**

**September 8, 2021**

**EXHIBIT 45**



# Review of Motion

The Motion seeks to amend the Land Use Commission's "Findings of Fact, Conclusions of Law and Decision and Order" filed July 29, 2013 (FOF/COL) which had granted a boundary amendment to allow the development and construction of Kihei High School on the island of Maui, subject to certain conditions. Specifically the Motion seeks the removal from condition 1(b) of the FOF/COL, which is the requirement that a Grade Separated Pedestrian Crossing (GSPC) be constructed or made available prior to the opening of the school. The GSPC condition also requires that HIDOE get approval from HIDOT of its pedestrian and traffic plans.



# Traffic / Pedestrian Studies

- Traffic Impact Report, includes Traffic Signal Warrant Study (Sep 2011, Revised April 2012; WOC) – published in Final EIS; Updated October 2014; WOC), *Exhibit 38*
- Kihei High School Pedestrian and Bicycle Analysis (Aug 10, 2012; Stantec and WOC) – published in Final EIS, *Exhibit 26*
- Safe Routes to Kihei High School: Pedestrian Route Study (2014; WALC), *Exhibit 2*
- Kihei High School – Supplemental Transportation Analysis: Pedestrian Route and Roundabout Studies (October 25, 2016; Fehr & Peers), *Exhibit 4*
- Kihei High School – Multimodal Operations Alternatives Evaluation of the Kulanihako'i Street/Piilani Highway Intersection (August 1, 2019; Fehr & Peers) *Exhibit 11*
- Piilani Highway/Kihei High School Roundabout Evaluation (July 28, 2020; WSP), *Exhibit 8*



# Future Studies Required by FOF/COL

HIDOE shall submit 3 updated TIARs and 3 updated pedestrian route studies and analyses for the project:

- The 1<sup>st</sup> update to be submitted one full year after opening of Phase I of the Project,
- The 2<sup>nd</sup> with HIDOT approval prior to the issuance of any certificate of occupancy for Phase II of the Project,
- And the 3<sup>rd</sup> with HIDOT approval one full year after full build out of Phase II of the Project.

(with any delays over three years between phasing, HIDOE shall submit additional updated TIARs and pedestrian route studies)

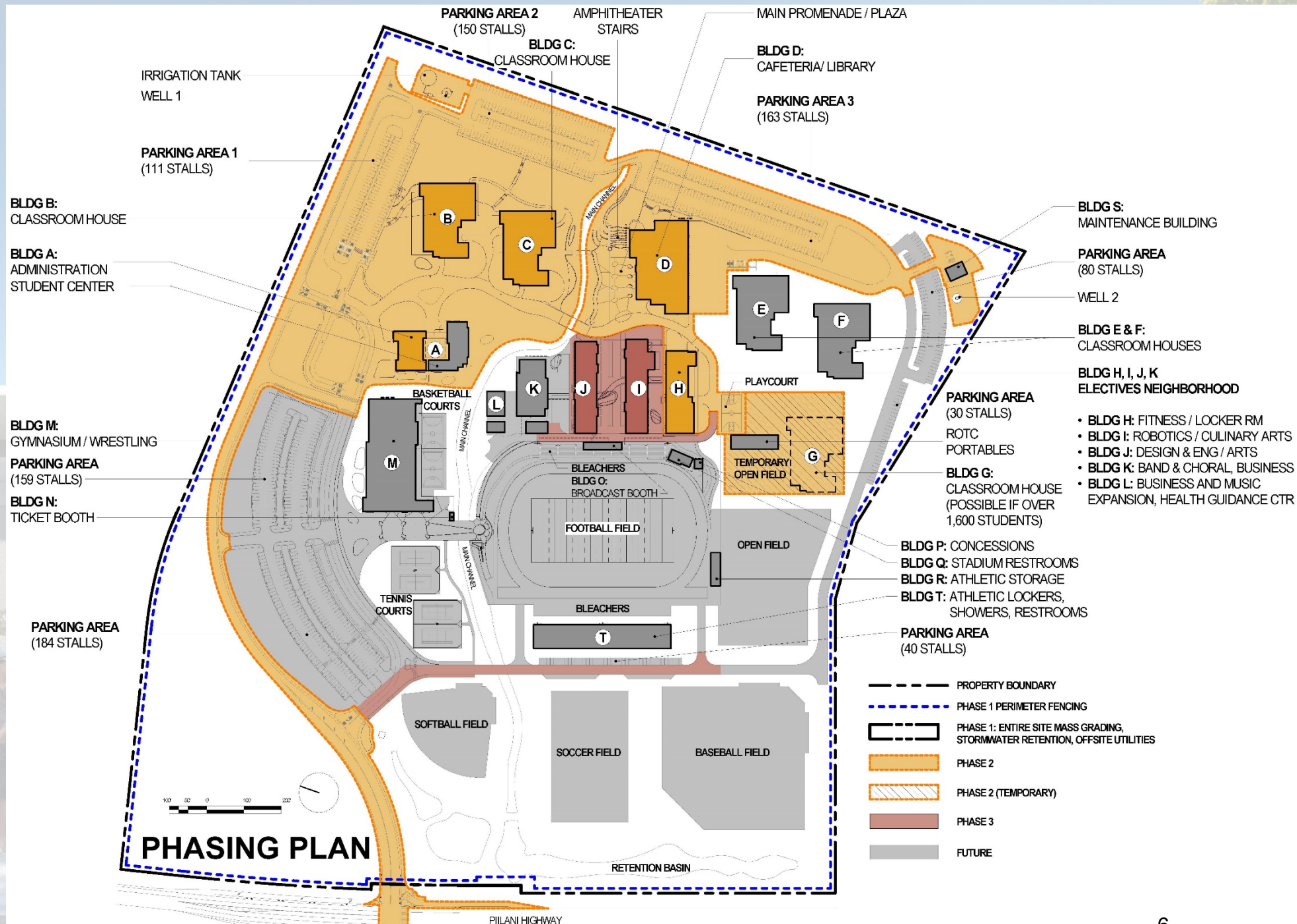


# Recap of Timeline

- Aug. 20, 2020: HIDOE filed Motion seeking to eliminate the GSPC requirement from needing to be in place at the time of the school's opening.
- Two LUC Hearings held in 2020: on Sept. 10th and Nov. 4<sup>th</sup>
- HIDOE held a virtual meeting with the Kihei Community Association on Oct. 27, 2020
- Followed by Nov. 10<sup>th</sup> written request to HIDOE from Commission with follow up questions.
- Jan. 12, 2021: HIDOE & HIDOT virtual meeting with the Community
- Jan. 19, 2021 HIDOE's website for Kihei High School - added links & photos
- Feb. 1, 2021 Memo response to LUC questions from November 2020
- April, May, June, July, August – construction progress uploads to website
- Aug. 17, 2021 HIDOE virtual meeting with the Community



# Phase 2 Construction (in yellow)





# Phasing of Student Enrollment

The high school is being planned to open for 9<sup>th</sup> Graders only in School Year 2022-23, with a phased roll out of 10<sup>th</sup>, 11<sup>th</sup> & 12<sup>th</sup> graders over the following 3 years.

## **5 Year Projected Enrollment Numbers (subject to change)**

<b><u>Sch Year</u></b>	<b><u># of Students</u></b>	<b><u>Grade Level/s</u></b>	<b><u>Future Traffic /Pedestrian Studies</u></b>
2022-23	167	9 <sup>th</sup>	After Year 1 (Fall 2023)
2023-24	299	9 <sup>th</sup> , 10 <sup>th</sup>	
2024-25	457	9 <sup>th</sup> , 10 <sup>th</sup> , 11 <sup>th</sup>	
2025-26	581	9 <sup>th</sup> , 10 <sup>th</sup> , 11 <sup>th</sup> , 12 <sup>th</sup>	(additional studies after 3 years
2026-27	577	9 <sup>th</sup> , 10 <sup>th</sup> , 11 <sup>th</sup> , 12 <sup>th</sup>	if future phases not completed)

Source: Assessment & Accountability Branch, Office of Strategy, Innovation & Performance, HIDOE, May 5, 2021



The following slides were shared with the community  
on January 12, 2021  
from the Hawaii Department of Transportation, Highways Division





# Kihei Roundabout

Piilani Highway Intersection Improvements

Vicinity of Kulanihakoi Street

Project Number HWY-02-17

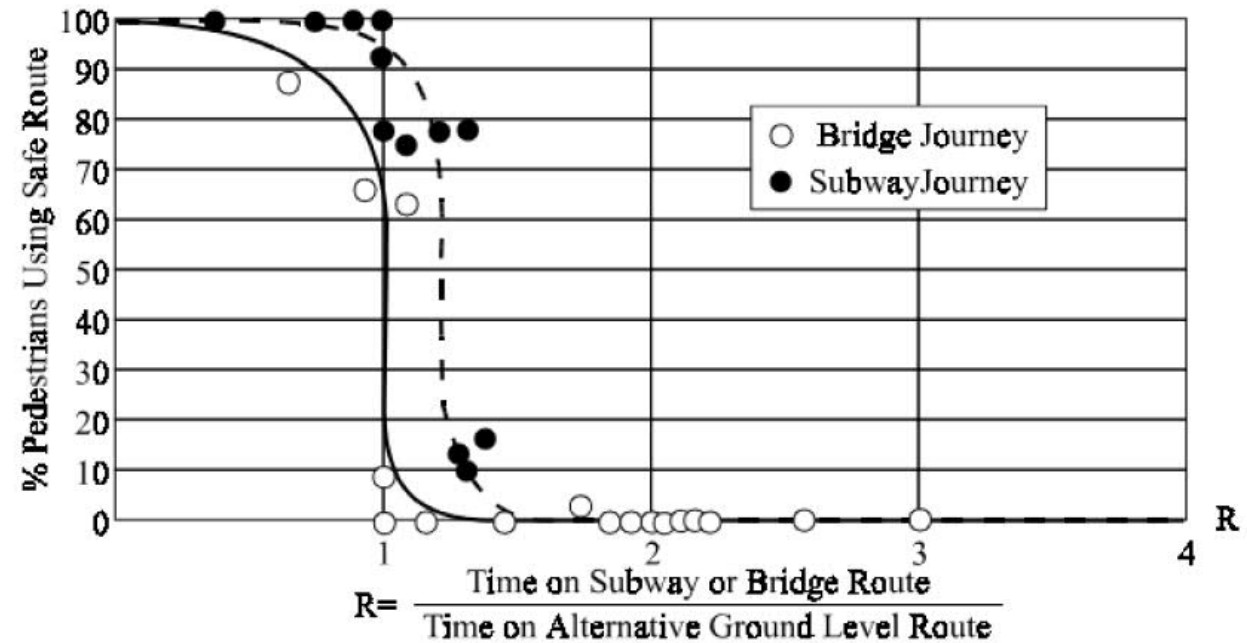
# Project Background and HDOT's History with Roundabouts

- ▶ Pre-2006: HDOT considered roundabouts not appropriate for State roadways.
- ▶ February 2007: First roundabout (single-lane, 4-legged) constructed at Kapaa Bypass Road and Oloheua Road in Kapaa, Kauai.
- ▶ December 2008: HDOT adopted policy and guidelines accepting roundabouts as an alternative intersection configuration.
- ▶ December 2016: Completed single-lane 3-legged roundabout at Keaau-Pahoa Road and Old Government Road in Keaau, Hawaii Island.
- ▶ On-going Construction Projects:
  - ▶ Single-lane 3-legged roundabout at Keaau-Pahoa Road and Ainaloa Boulevard in Keaau, Hawaii Island.
  - ▶ Single-lane 3-legged roundabout at Kuhio Highway and Mailihuna Road in Kapaa, Kauai.
- ▶ Projects Currently Under Design:
  - ▶ Single-lane 3-legged roundabout at Kahekili Hwy and Kamehameha Hwy. in Kahaluu, Oahu. Est. completion - May 2023.
  - ▶ Two single-lane 3-legged roundabouts at Keaau-Pahoa Road / Makuu Drive and Keaau-Pahoa Road / Orchidland Drive in Keaau, Hawaii Island.
  - ▶ Two-lane 4-legged roundabout at Piilani Highway and Kulanihakoi Street / Kihei High School in Piilani, Maui.



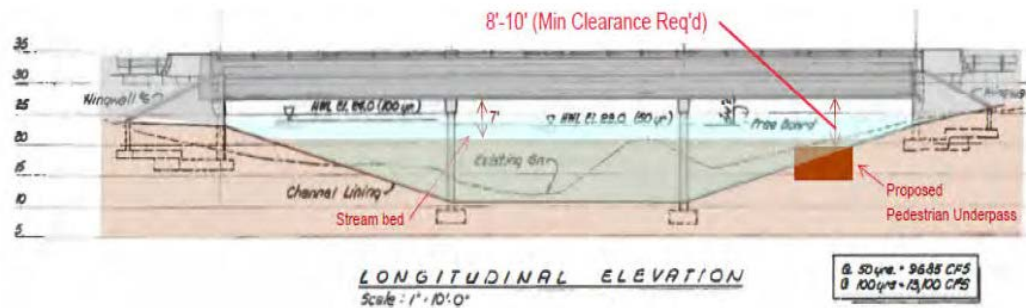
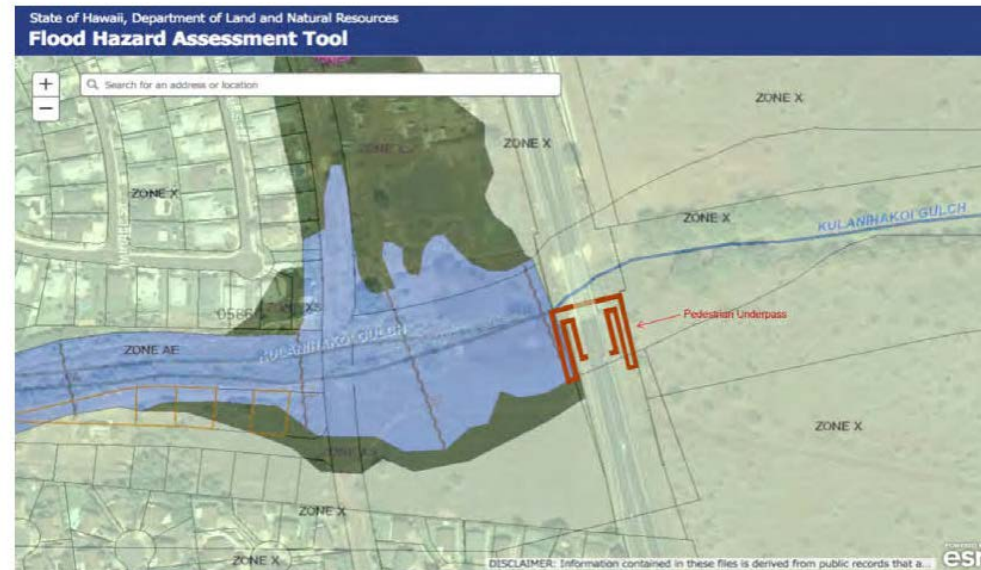
# Overpass/Underpass Use Data

- ▶ Texas Transportation Institute study found that virtually no one will use a pedestrian overpass if it takes 25% longer to cross compared to crossing at grade.
- ▶ Using an overpass at this location will take 1.8 times longer with stairs and 5.8 times longer with ramps compared to an at-grade crossing.
- ▶ Using an underpass at Kulanihakoi Gulch or Waipuilani Gulch will take over 15 times longer compared to an at-grade crossing.
- ▶ Pedestrians prefer to limit walking distance and will often take usual shortcuts to save even a few steps and seconds of time.



# Existing Bridges Adjacent to Kihei High School

- ▶ FEMA map analysis makai of the Kulanihakoi Gulch bridge shows the 100-year floodplain is wider than the bridge. A proposed pedestrian underpass will be built in the 100-year floodplain area or footprint.
- ▶ Kulanihakoi Gulch as built (1978) provides a 7' clearance between the stream bed and underside of the bridge. This vertical clearance is not sufficient for bicycle and pedestrian clearance of 8'-10' and to provide capacity for a 100-year storm.
- ▶ No FEMA map analysis for Waipuilani Gulch. However, it is likely similar to Kulanihakoi Gulch since the gulches are in close proximity that serve the same watershed.

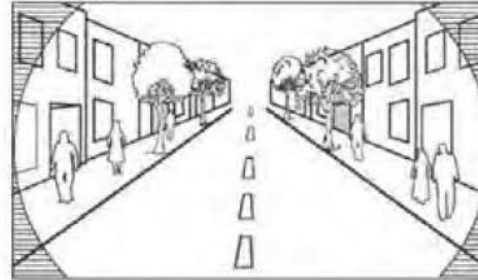




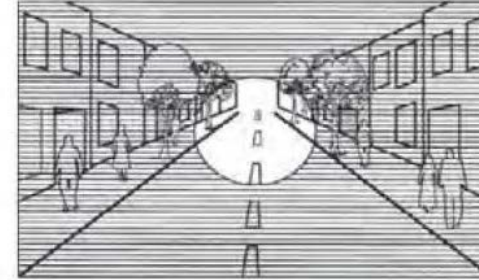
# Safety Considerations

- ▶ According to the American Association of State Highway Transportation Officials Highway Safety Manual roundabouts reduce the types of crashes where people are seriously hurt or killed by 78-82% when compared to conventional stop-controlled and signalized intersections.
- ▶ Federal Highway Administration and Insurance Institute for Highway Safety studies show that properly designed roundabouts result in a 37% reduction in overall collisions, a 40% reduction in pedestrian collisions, and a 90% reduction in fatalities over more traditional signalized and stop-controlled intersections.
- ▶ In addition to lowering vehicle speeds, roundabouts make intersections safer for pedestrians of all ages by minimizing conflicts, eliminating crashes caused by drivers disregarding traffic signals and stop signs, and minimizing pedestrian exposure to traffic by enabling people to cross narrow travel lanes that are separated by a median refuge at each approach.

## WHY SPEED MATTERS

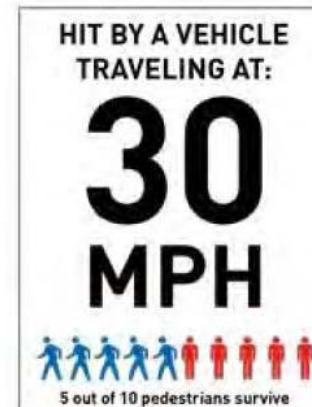
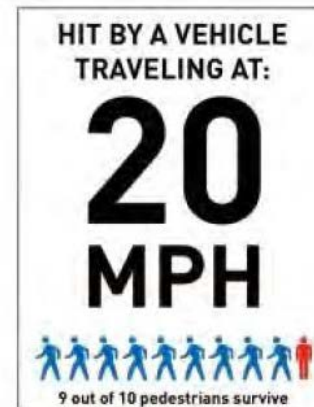


Field of vision at 15 MPH



Field of vision at 30 to 40 MPH

A driver's field of vision increases as speed decreases. At lower speeds, drivers can see more of their surroundings and have more time to see and react to potential hazards.



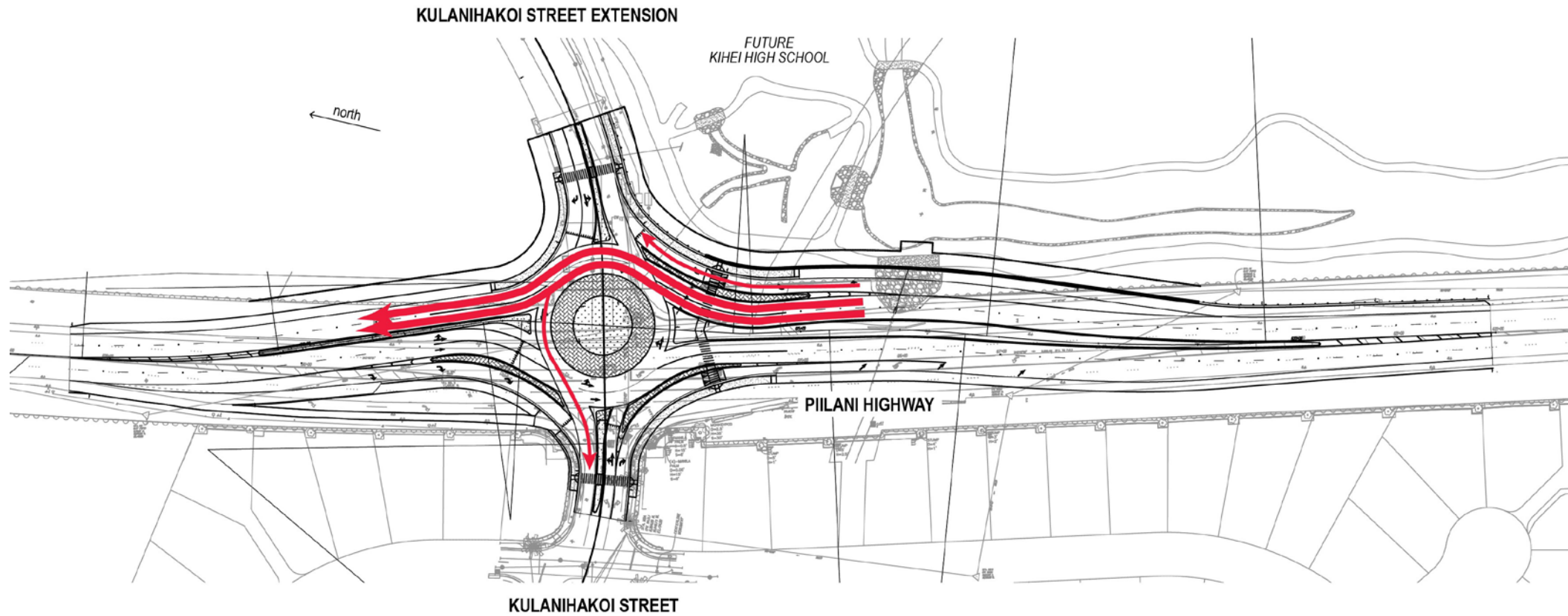
Speed is especially lethal for vulnerable users like pedestrians and people biking. The risk of injury and death increases as speed increases.



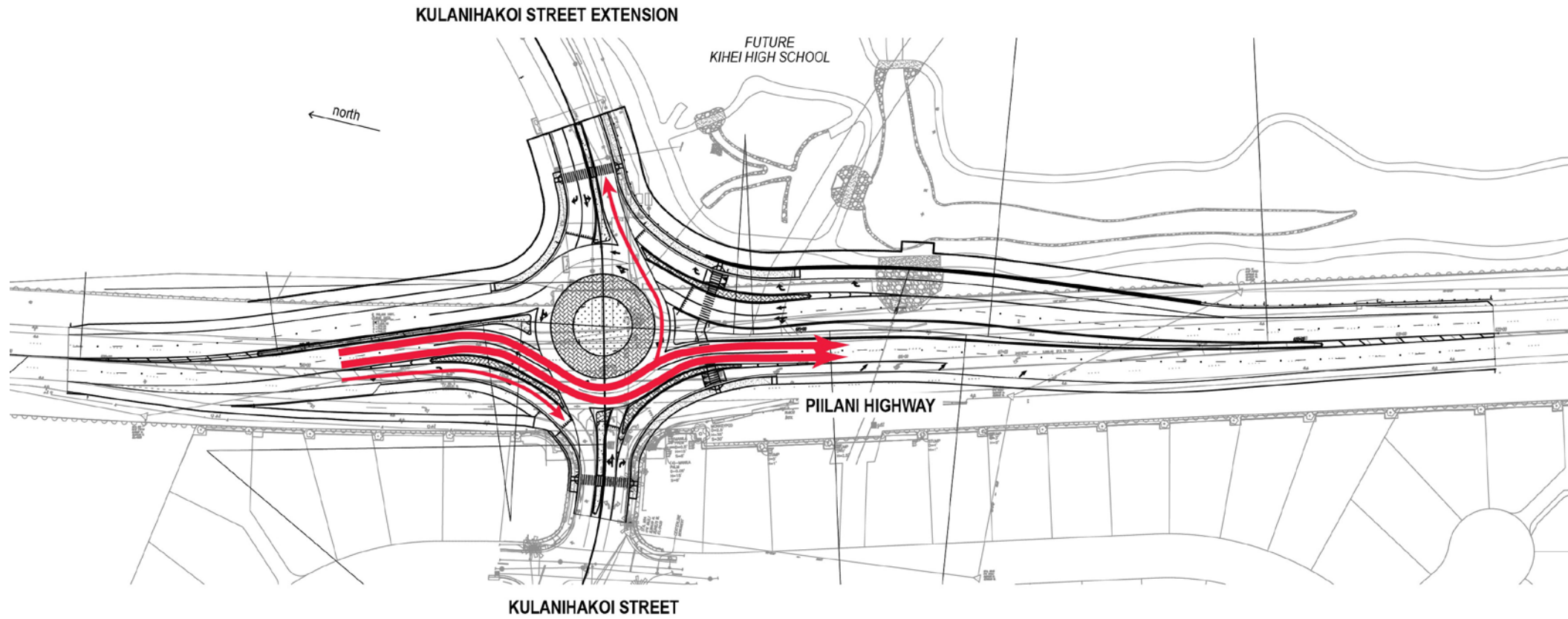




# Roundabout Traffic Flow - Northbound

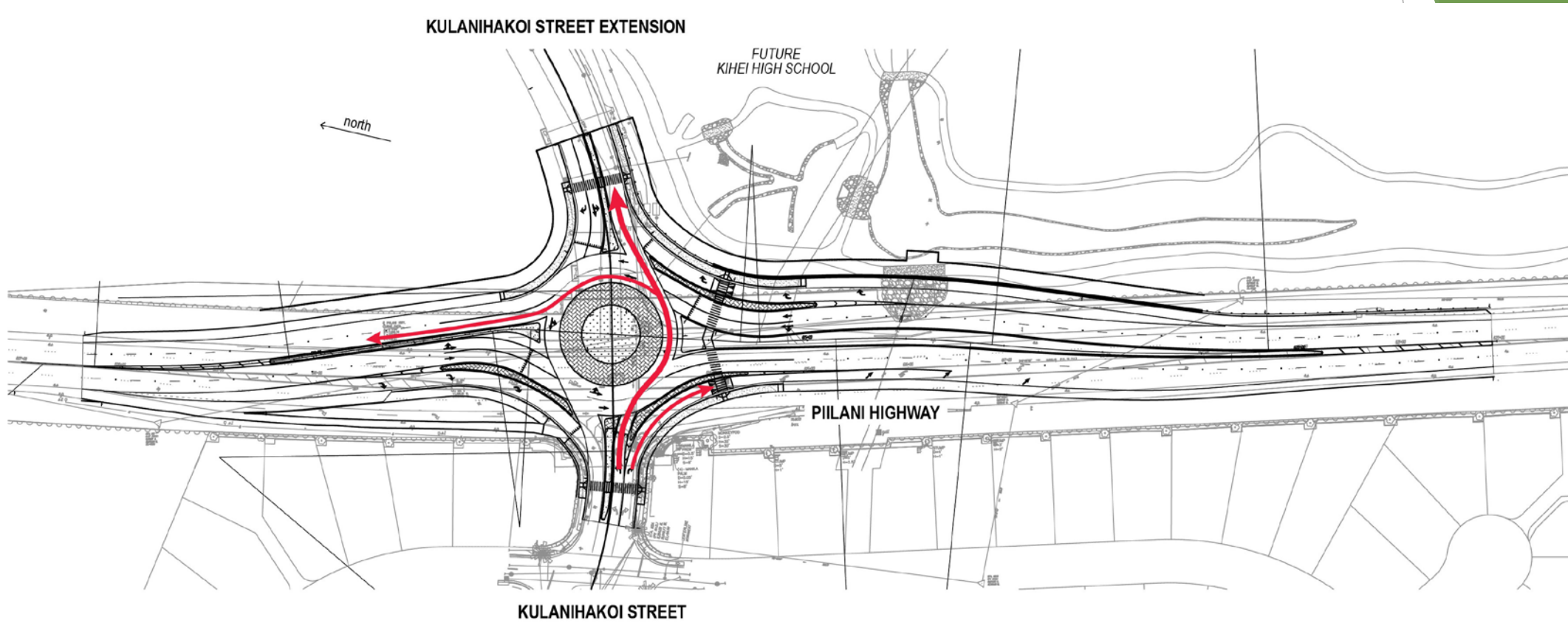


# Roundabout Traffic Flow - Southbound

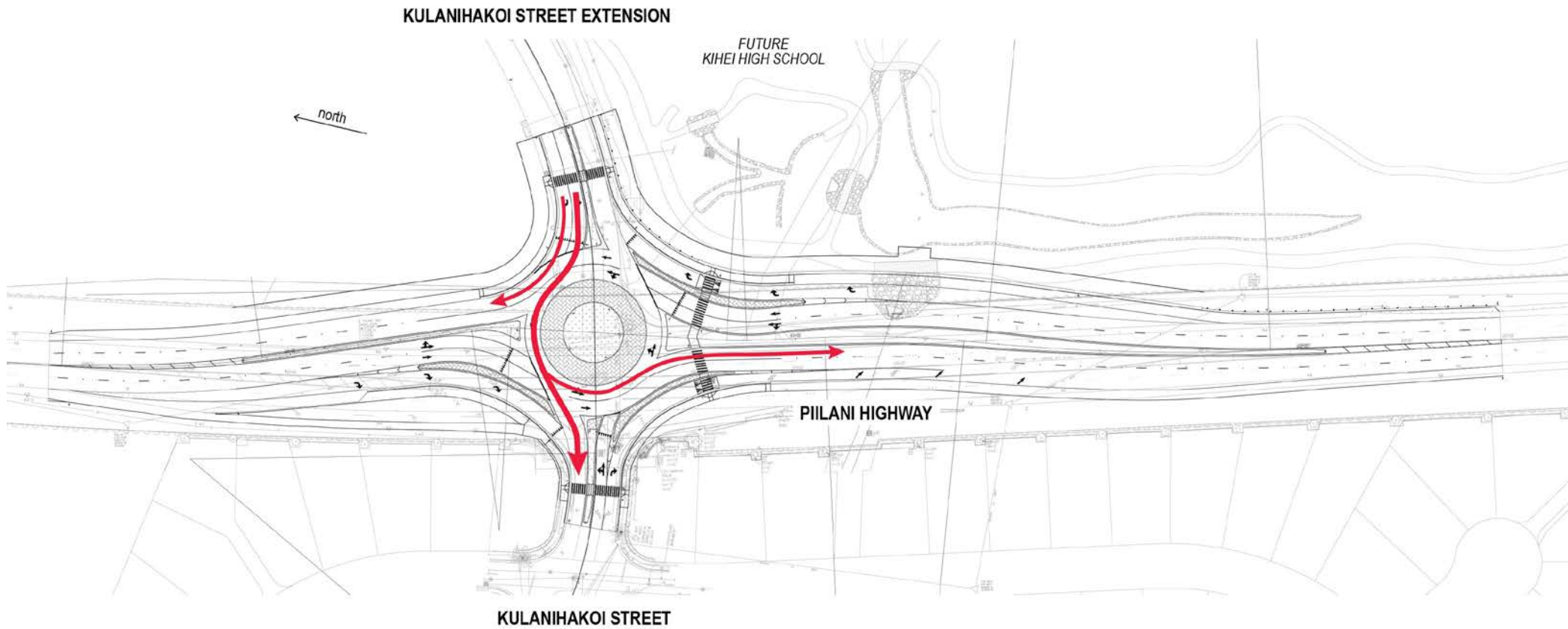




# Roundabout Traffic Flow - Eastbound

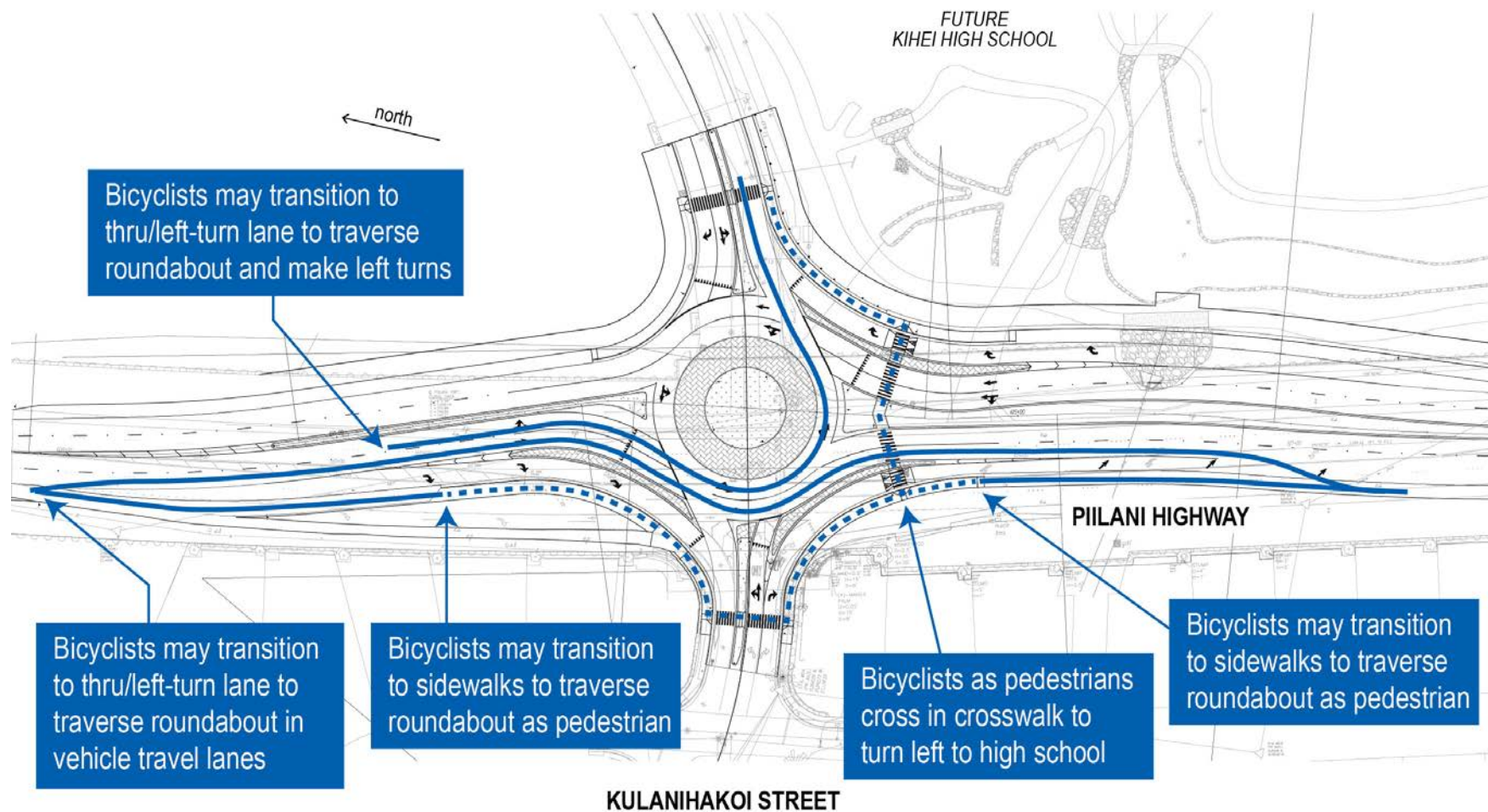


# Roundabout Traffic Flow - Westbound

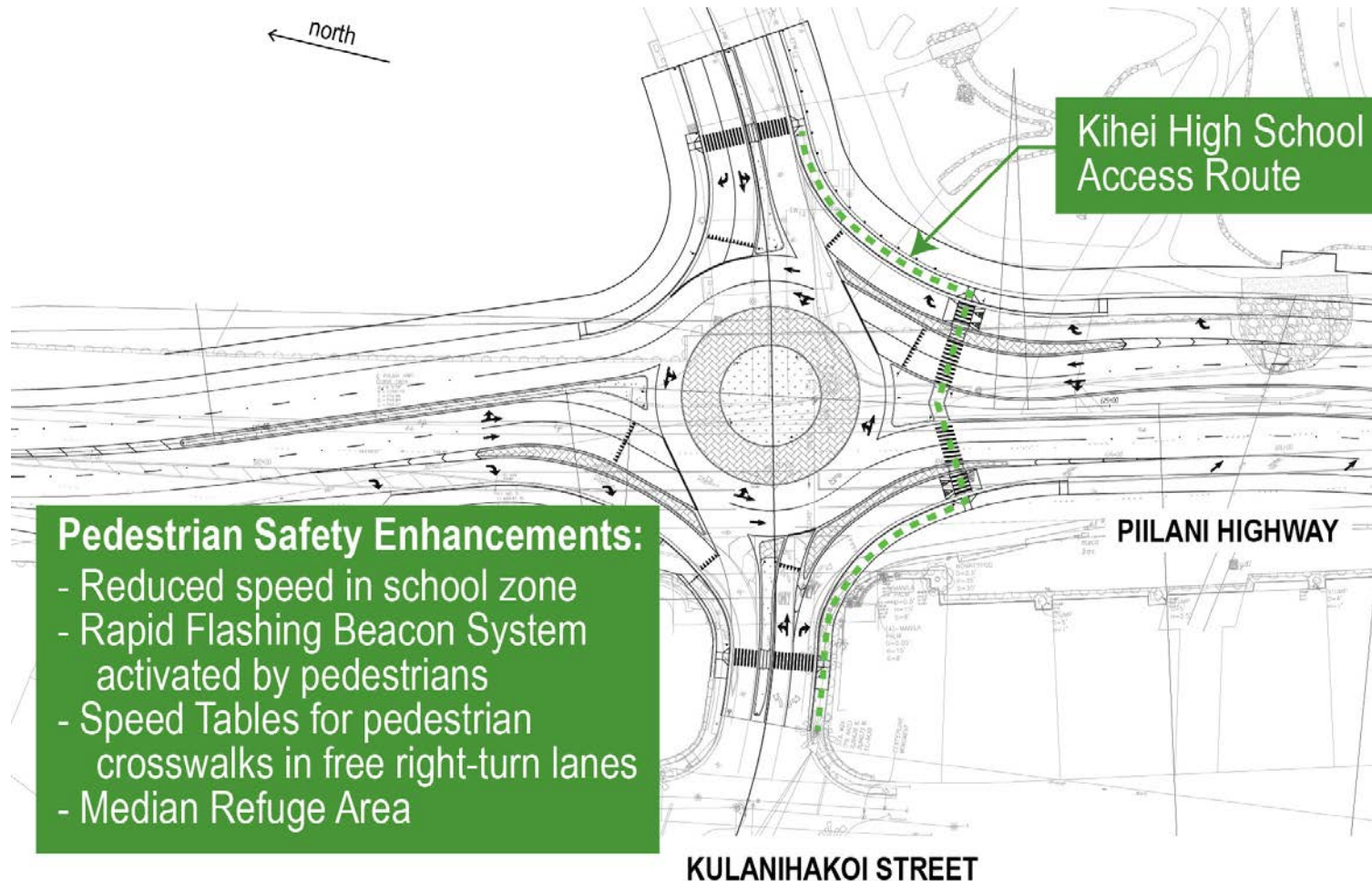




# Bicycle User Accommodations at the Proposed Roundabout



# Pedestrian User Accommodations at the Proposed Roundabout



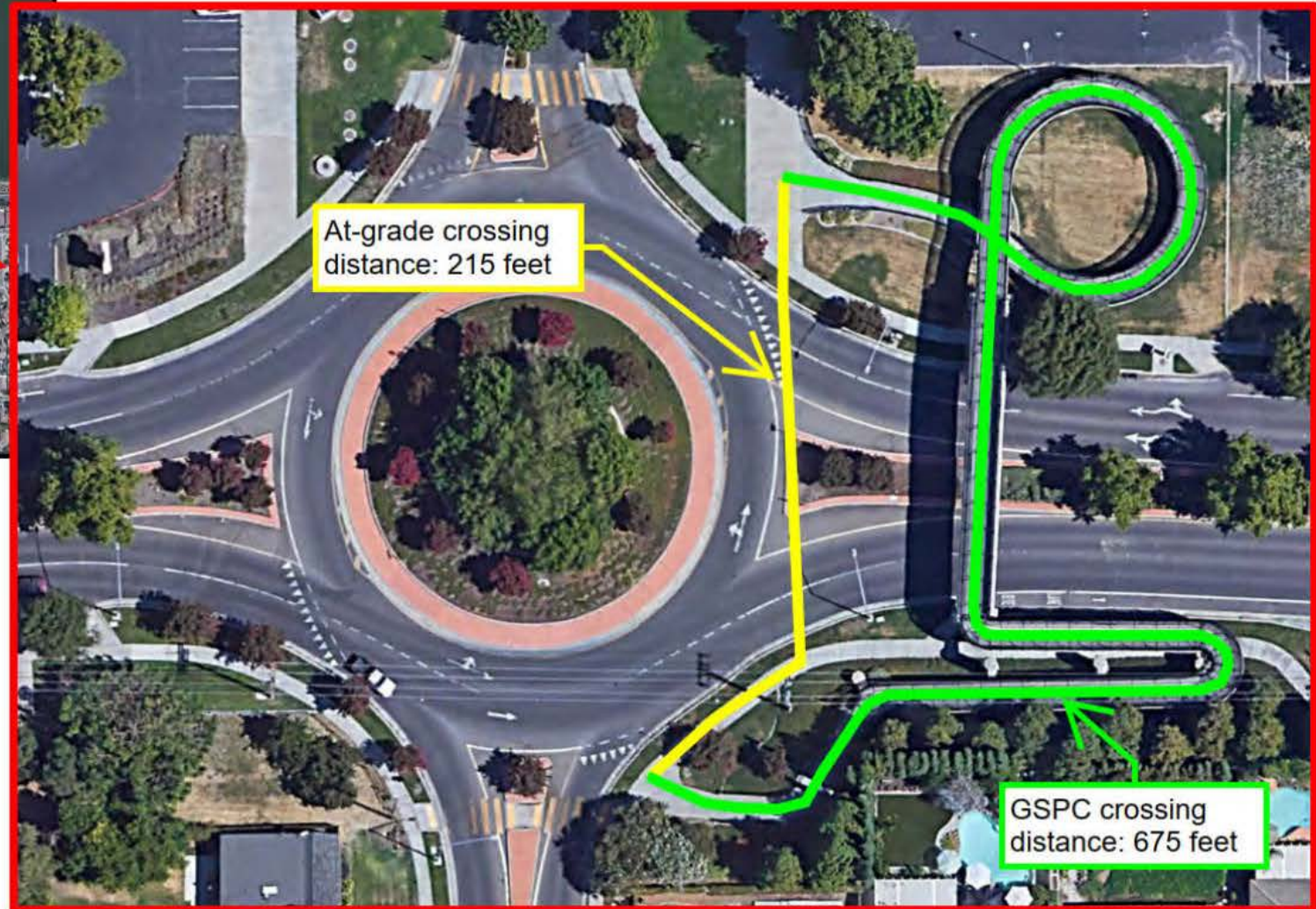


# Modesto Roundabout / GSPC Example



## Safety Issues:

- Out-of-direction travel discourages use of GSPC
- Students observed crossing at-grade without benefit of signs, markings, defined path
- Motorists unaware that pedestrians may be present



# Construction of the New Roundabout

- ▶ There will be temporary construction impacts regarding lane restrictions and shifting, noise, dust, and access changes.
- ▶ Construction is anticipated to take 10 months and be completed by August 1, 2022.
- ▶ The roundabout will result in a much smoother and safer operation patterns.
- ▶ The project would create a new bicycle route / continuation of an existing bicycle route at the roundabout.
- ▶ The roundabout will create a safe pedestrian crossing for students attending the new Kihei High School.
- ▶ There will be systems put in place that will be intended to do the following:
  - ▶ Slow traffic
  - ▶ Alert drivers to pedestrians in the area



BEFORE THE LAND USE COMMISSION  
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In the Matter of the Petition of

DEPARTMENT OF EDUCATION,  
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Map Key Nos. 2-2-02: 81 and 83.

DOCKET NO. A11-794

CERTIFICATE OF SERVICE

**CERTIFICATE OF SERVICE**

I HEREBY CERTIFY THAT a copy of Supplemental Exhibit to Petitioner Department of Education, State of Hawaii's Motion to Amend the Land Use Commission's Findings of Fact, Conclusions of Law and Decision and Order Filed July 29, 2013; Exhibit "45"; was duly served via Electronic Mail upon the following at:

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DATED: Honolulu, Hawai'i, September 8, 2021.

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Attorneys for Petitioner  
DEPARTMENT OF EDUCATION,  
STATE OF HAWAII

Docket No. A11-794; In the Matter of the Petition of Department of Education, State of Hawai'i, before the Land Use Commission of the State of Hawai'i; SUPPLEMENTAL EXHIBIT TO PETITIONER DEPARTMENT OF EDUCATION, STATE OF HAWAII'S MOTION TO AMEND THE LAND USE COMMISSION'S FINDINGS OF FACT, CONCLUSIONS OF LAW AND DECISION AND ORDER FILED JULY 29, 2013; EXHIBIT "45"; CERTIFICATE OF SERVICE