|  |  |  |  |
| --- | --- | --- | --- |
|  | **Transportation Volume (people/hour)** | **Traffic Volume**  **(Vehicles/hour)** | **Traffic Speed**  **(mph)** |
| Schoenhauser Allee | 10 – 20 k | 1 to 3 k | 30 mph |
| Prenzlauer Allee | 5 – 10 k | 2 to 4 k | 25 to 30 mph |
| Pappelallee | 500 to 1000 | 500 | 20 to 25 mph |
| Raumerstrasse | 200 to 500 | 400 | 20 mph |
| Goehrener Strasse | 200 | 100 | 15 mph |

**CE4720/5720**

**HW 4 Solution**

**Question 1**

Lecture 4.2 illustrates the wide variety of street types that make up the street network in Prenzlauerberg, Berlin.

Estimate 1) likely transportation volume, 2) likely traffic volume and 3) traffic speed on each road (just ballpark in all cases!).

Rate the five streets from the point of view of livability on a 10-point scale (0 worst).

|  |  |
| --- | --- |
|  | **Livability** |
| Schoenhauser Allee | 7 |
| Prenzlauer Allee | 6 |
| Pappelallee | 8 |
| Raumerstrasse | 8 |
| Goehrener Strasse | 8 |

Describe specific features of the i) street network design, and ii) street design characteristics that contribute to the transportation performance (identified above) and the livability of each street.

|  |  |  |
| --- | --- | --- |
|  | **Network Character** | **Street Cross-section Design** |
| Schoenhauser Allee | Major Continuous Route Across City | 1. Wide Travel Way 2. Four Traffic Lane 3. Asphalt pavement 4. Parallel On-street parking 5. Bike Lanes 6. Overhead Rail 7. Streetcar (share with cars) 8. Wide Pedestrian Way 9. Traffic Controlled Intersections |
| Prenzlauer Allee | Major Continuous Route Across City | 1. Wide Travel Way 2. Four Traffic Lane 3. Asphalt pavement 4. Streetcar (separate right of way) 5. Parallel On-street parking 6. Wide Pedestrian Way 7. Traffic Controlled Intersections |
| Pappelallee | Extend Across Neighborhood but not into adjacent neighborhoods | 1. Medium to Narrow Travel Way 2. Two Traffic Lane (asphalt pavement) 3. Streetcar (share with cars) 4. Parallel On-street Parking 5. No separate bike way 6. Average width Pedestrian Way 7. Traffic Controlled Intersections |
| Raumerstrasse | 1. Extend Across Neighborhood 2. Crooked Alignment | 1. Narrow Travel way 2. Two Traffic Lane 3. Cobble or brick 4. Lanes not delineated 5. Head-in On-street Parking 6. No separate bike way 7. Pedestrian Way 8. Shared Space Type Intersections |
| Goehrener Strasse | 1. Short Street 2. Makes 90 degree Turn | 1. Very Narrow Travel way 2. Two Traffic Lane 3. Cobble or brick 4. Lanes not delineated 5. Head-in On-street Parking 6. No separate bike way |

**Question 2**

This question is based on the street network shown in the attached slide show: [HW Street Networks](http://www.engr.uconn.edu/~garrick/ce371/CE%204720%205720%20Spring%202015/2015%20HW%20and%20Projects/2015%20hw04%20street%20networks.pptx)

A total of five squares are highlighted for the three street networks. For the section of street network that is highlighted determine

1. The type of street network based on the classification system given in Lecture 4.1
2. The scale or density of the network (based on intersection per square mile)
3. The level of connectedness of the street network (based on link-to-node ratio).

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Type** | **Density** | **Link-to-Node** |
| Turlock 1 | GG | 176 | 1.68 |
| Chico 1 | GG | 256 | 2.66 |
| Chico 2 | GG | 140 | 2.31 |
| Chico 3 | TT/GT? | 200 | 1.27 |
| Davis 1 | GT? | 160 | 1.42 |

**Question 3**

In Lecture 4.2, street networks are shown for three potential stops on the proposed new Hartford Line (commuter rail from New Haven to Springfield) and one stop on the Shoreline East Rail Line.

Use the seven patterns for strong urban street network to rate these street network on the extent to which they meet each criteria.

Based on these ratings, list the cities in the order from best to worst on the strength of their street network, and thus, their potential to host strong transit oriented development (TOD).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Wallingford** | **Meriden** | **Berlin** | **New London** |
| Density of  Intersections | 7 | 6 | 4 | 8 |
| Connectivity  Within | 7 | 6 | 5 | 8 |
| Connectivity  Between | 6 | 5 | 4 | 6 |
| Variety of  Streets | 7 | 5 | 4 | 8 |
| No  Restrictions | 8 | 7 | 7 | 8 |
| Walkable | 7 | 6 | 4 | 8 |
| Building  Frontage | 8 | 7 | 5 | 8 |
| **Overall** | **7** | **6** | **4** | **8** |