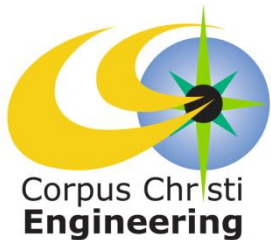


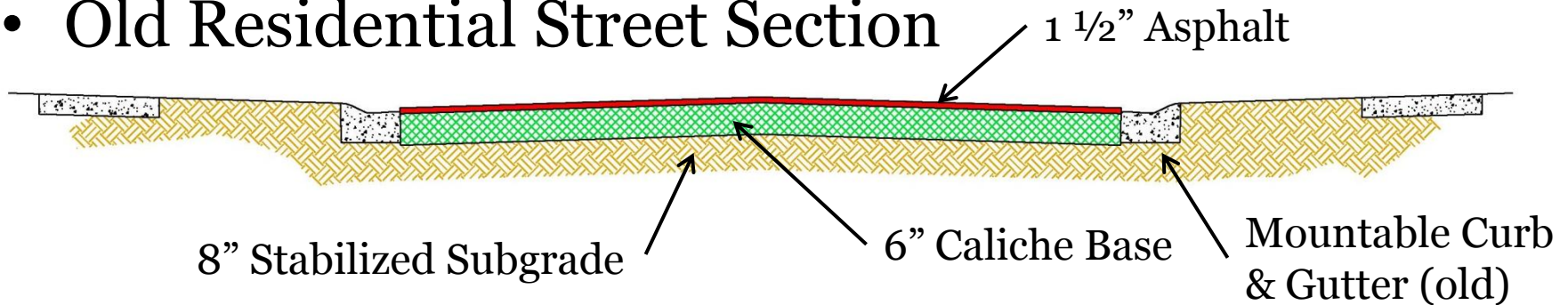


Design Standards Ordinance

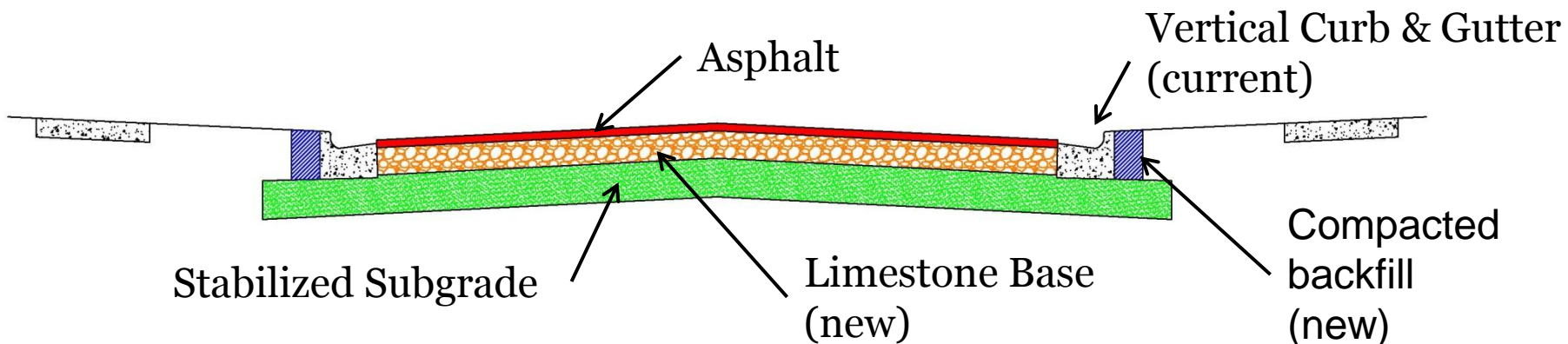


Council Presentation
February 19, 2013

- Old Residential Street Section

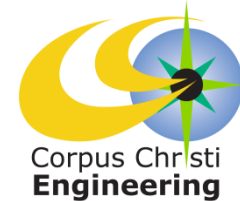


- Residential Street Section improvements:





Street Design



- 30 Year Design Life based on American Association of State Highway and Transportation Officials (AASHTO) Guide for Design of Pavement Structures
 - Based on on-site soil conditions
 - Clay soils
 - Sandy soils
 - Utilizing route specific traffic data converted to Equivalent Single-Axle Loadings (ESAL)

30 Year Analysis for a typical Residential Street (100 Homes)					
Vehicle Types	Average Daily Trips	Growth Factor* (2% annual)	Design Traffic	ESAL Factor	Design ESAL
Automobiles	900	40.57	13,327,245	0.0008	10,662
Buses	4	40.57	59,232	0.6806	40,313
Pickup/Panel Trucks	100	40.57	1,480,805	0.0122	18,066
2 Axle Trucks	0.5	40.57	7,404	0.189	1,399
5 Axle Semi Trailers	0.2	40.57	2,962	2.3187	6,867
				Total ESALs:	77,307

*For a typical residential subdivision there would be no growth factor and so the 30 year ESAL count would be: 57,000

Street Design

Figure 3.1 Design Chart for Flexible Pavements Based on Using Mean Values for Each Input (pg II-32 Design of Pavement Structures)

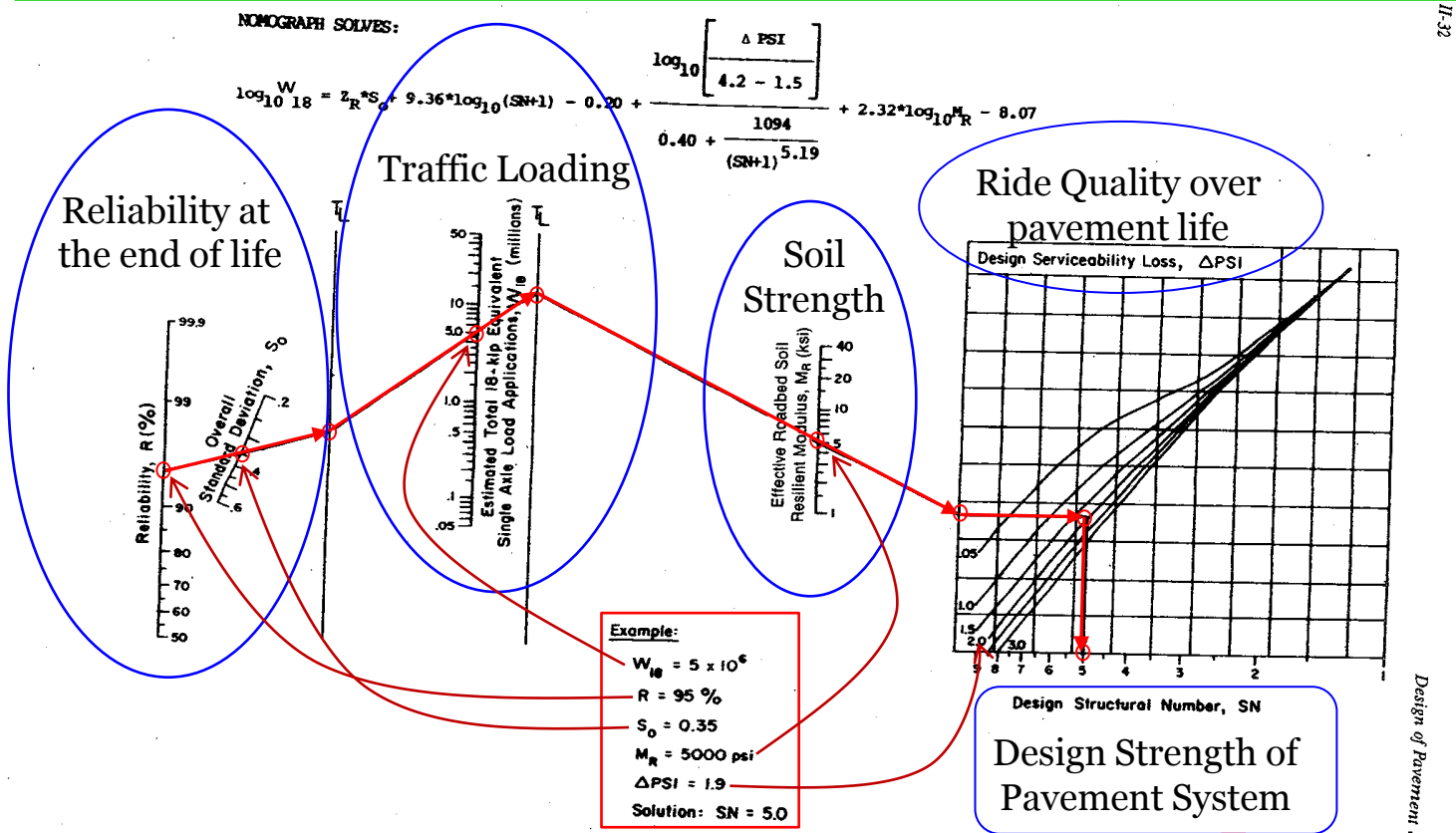
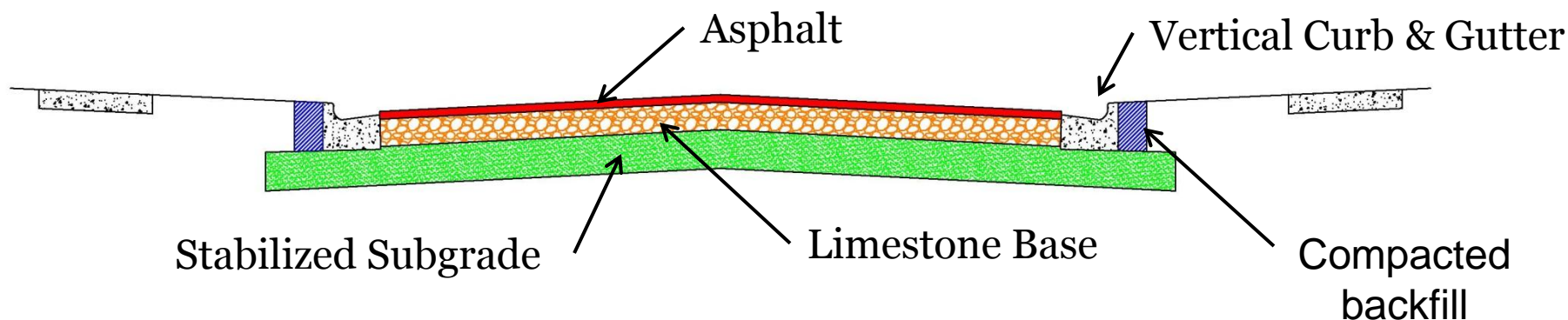


Figure 3.1. Design Chart for Flexible Pavements Based on Using Mean Values for Each Input

$$SN = a_1 * AC \text{ depth} + a_2 * \text{base depth} + a_3 * \text{sub-base depth}$$

Street Design

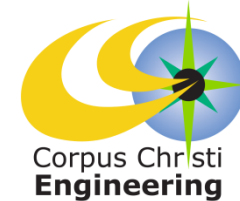


- $SN = a_1 * AC \text{ depth} + a_2 * \text{base depth} + a_3 * \text{sub-base depth}$
- From Design Example: $SN = 5$

Structural Material	a value	depth (in)	Sn
Asphalt	0.42	4	1.68
Crushed Limestone	0.18	12	2.16
Lime Stabilized Base	0.11	12	1.32
			5.16

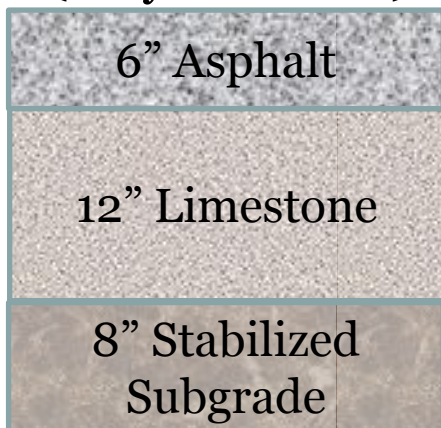


Street Design



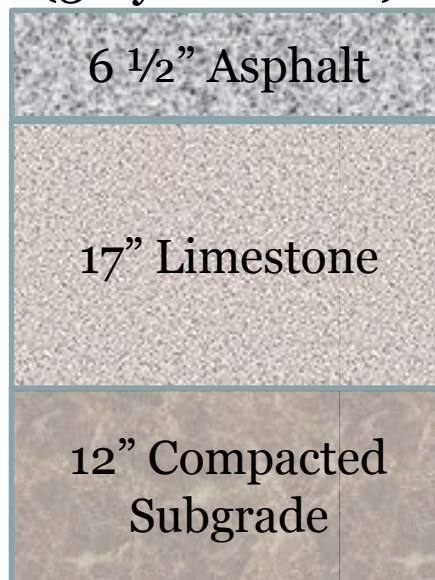
SH 286 (Crosstown)

Freeway
ESALs: 7,400,000
(20 year count)



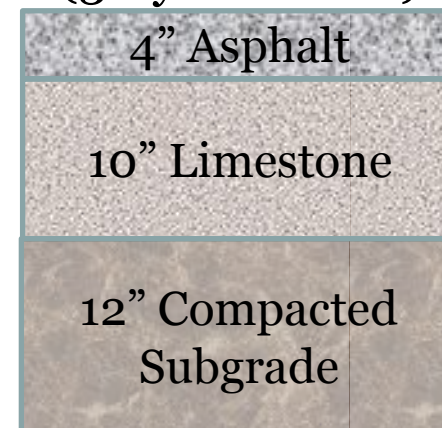
S. Staples St.*

Arterial
ESALs: 9,150,000
(30 year count)



Williams Dr.*

Collector
ESALs: 3,360,000
(30 year count)



*These two streets are being built with a concrete pavement section, which was also designed to a 30 year life.



Street Design

